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CATALOGUE AND PRICE-LIST

OF

FINE IMPORTED AND AMERICAN

MACHINERY, TOOLS,

MATERIALS, AND SUPPLIES,

FOR

MACHINISTS, JEWELLERS, WATCHMAKERS, ENGRAVERS, DIE-SINKERS; MATHEMATICAL INSTRUMENT, TELEGRAPH INSTRUMENT, AND SEWING-MACHINE MANUFACTURERS.

ALSO,

TOOLS AND INSTRUMENTS FOR SCHOOLS, AMATEURS, ETC.

FRASSE & CO.,

62 CHATHAM STREET, NEW YORK.

S. J. FRASSE. [P. O. Box 4627.] A. H. BRIGGS.

JANUARY, 1875.

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To Our Patrons and the Public.

In issuing our new and very full Catalogue and Price-List, we meet a want long felt by our patrons in all parts of the country. By aid of the illustrations and price-lists persons residing at a distance may, without preliminary correspondence, intelligently select and order, with a full assurance that their orders will be correctly and promptly filled.

Our long experience, large facilities, and extensive acquaintance with the trade enable us to assure our patrons, whether dealers or consumers, that we shall furnish the best goods at reasonable prices.

To amateurs in want of best instruments or fine tools, for scientific or mechanical purposes, we offer an extensive assortment on most favorable terms.

Our Price-List, though generally stable, is subject to market fluctuations, *without notice.*

Unless half a dozen or more of an article are ordered at one time, goods will not be sold at the dozen rate.

To parties purchasing large quantities we offer special terms.

For one cent per two ounces, or fraction thereof, goods can be sent by mail to any part of the United States; but no package exceeding four pounds can be so sent.

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Unless otherwise stipulated, goods will be shipped at risk of purchaser.

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Articles not strictly in our line purchased for parties ordering, and billed at lowest market rates.

FRASSE & COMPANY.

JANUARY, 1875.

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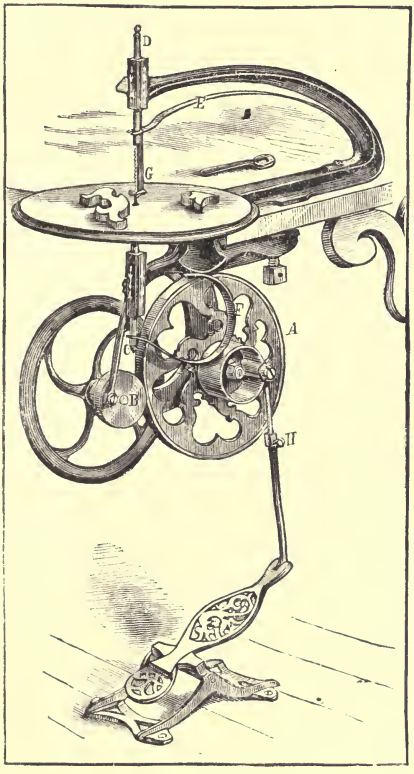


No. 2 Machine.

FLEETWOOD SCROLL-SAWING MACHINE.

No. 1 is handsomely finished, works true, has iron table veneered with walnut, double treadle, wheel-guard, and clamp for holding the finest saws. Price, $15 ; boxing, 40 cents.

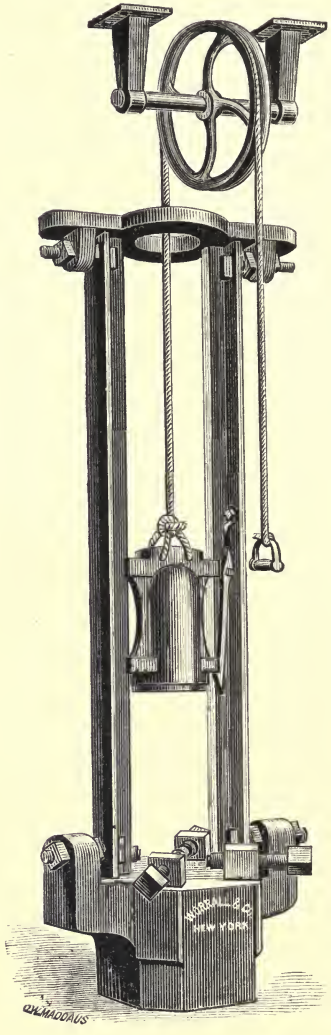
No. 2 is same size as No. 1 throughout ; has iron table japanned, single treadle, will hold only coarse saws. Price, $10 ; boxing, 40 cents.

No. 2, with extra clamps for holding all sizes of saws. Price, $13.

A beautiful STAND, made expressly for the Fleetwood Scroll Saw, with legs of iron and top of solid walnut, ready for shipment, price, $6.

BORING AND DRILLING ATTACHMENT for the Fleetwood Scroll Saw, complete, with one drill and boxed for shipment, $5 50 ; extra drills, 15 cents each.

Price-lists of designs for scroll-sawing sent on application.



No. 1. 4 ft. guides, 4½ in. between poppets, ... $60 00
No. 2. 6 ft. guides, 6 in. between poppets, ... 90 00
No. 3. 6 ft. guides, 7½ in. between poppets, ... 110 00
No. 4. 7 ft. guides, 10 in. between poppets, ... 150 00
No. 5. 8 ft. guides, 12 in. between poppets, ... 275 00
No. 6. 8 ft. guides, 17½ in. between poppets, ... 325 00

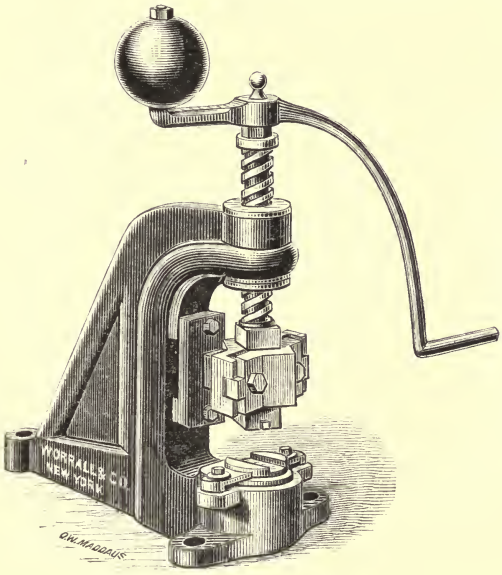
With gearing to work by power, extra.

Smooth-faced and grooved shank dies, extra.

DROP PRESS,

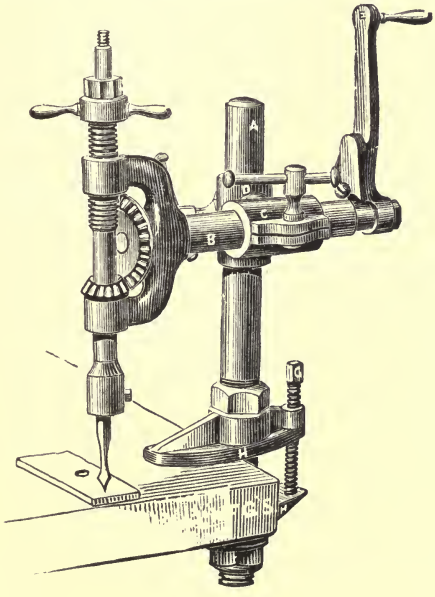
With wrought-iron poppet-heads and screws.

SCREW OR FLY PRESS.



No. 1. Screw 2 in. diameter, . . $45 00
No. 2. Screw 2 in. diameter, . . 60 00
No. 3. Screw 2 1/8 in. diameter, . 95 00
No. 4. Screw 2 3/8 in. diameter, . 165 00
Larger size screw presses to order.

UNIVERSAL ANGULAR DRILLING MACHINE.

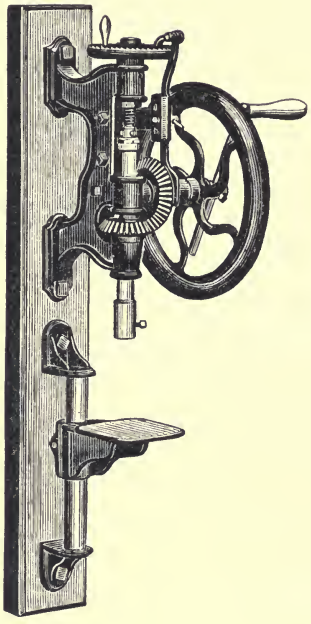


This Drill will work at any angle. By placing the crank on the drill-spindle, it will work with or without a ratchet.

A chuck, holding from 1/16 in. to 1/2 in. drills, furnished with each machine.

No. 1. Weight 26 lbs., drills up to 5/8 in. hole, each . . . $34 00
No. 2. Weight 52 lbs., drills up to 1 in. hole, each 38 00
No. 3. Weight 106 lbs., drills up to 1 1/2 in. hole, each . . . 65 00
No. 4. Weight 52 lbs., drills up to 1 1/2 in. hole, each . . . 58 00

No. 4 is made of steel and malleable iron ; Nos. 1, 2, and 3, wrought, malleable, and gray iron.



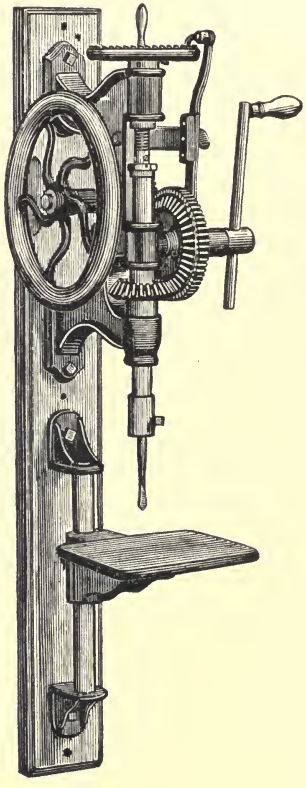
HAND DRILLS.

UPRIGHT SELF-FEEDING DRILL.

No. 1. Drills from 1/8 to 3/4 in. hole.

Length, 42 inches; Weight, 95 lbs.

Price, with Balance-wheel, . . $28 00
" without " " . . 25 00



UPRIGHT SELF-FEEDING DRILL.

No. 2. Drills from 1/8 to 1 in. hole.

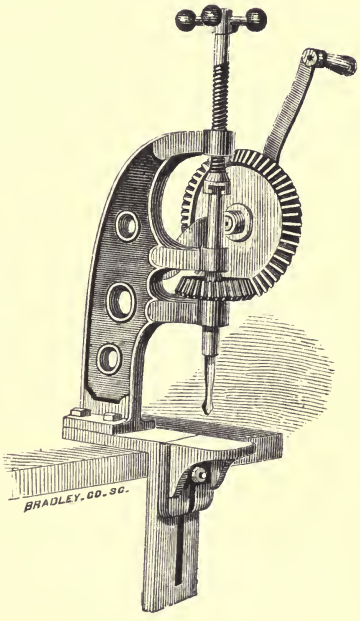
Length, 54 inches; Weight, 160 lbs.

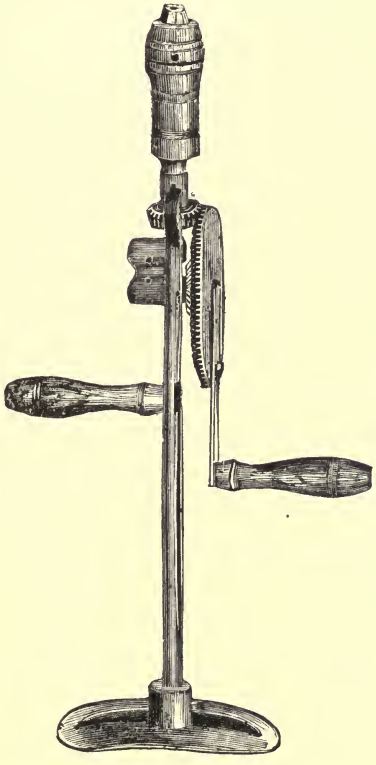
Price, with Balance-wheel, . . . $48 00

HENRY WHITON'S HAND DRILL.

This Drill has a feed of about 3½ inches, and a movable platform that can be lowered six inches or removed altogether. It is suitable for the hard work of blacksmiths and others, boring a hole in iron with ease from one inch down.

Weight, 60 lbs. Price, $12 00.





UNIVERSAL BREAST DRILL.

This is one of the most convenient Breast Drills in the market. It can be altered in a moment from slow to fast speed, or the reverse, by merely pulling out a pin and shifting the handle. Attached to the end is a very ingenious chuck which will centre and hold perfectly round, flat, or square tool shanks from $\frac{1}{16}$ to ½ in. The jaws are made of steel, and will hold any shaped tang.

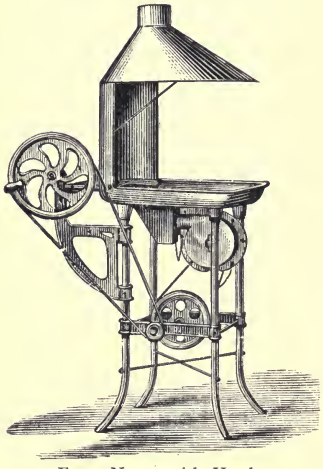
Price, ... $2 50 each.

FORGES.

KEYSTONE PORTABLE FORGES AND BLOWERS.

These Forges are light, strong, durable, easily worked, cheap, and occupy but little space.

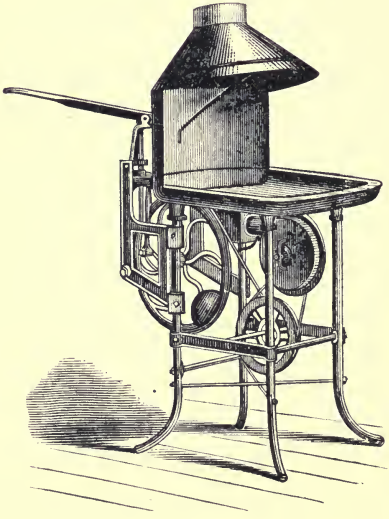
The fan-blast is far superior to bellows in every respect.



Forge No. 1, with Hood.

No. 2 is the same style as No. 1, only a larger size.

These Forges are used by blacksmiths, locksmiths, die-sinkers, etc. No. 1 will produce a quick welding heat on iron ¾ inch diameter, and No. 2 on iron 1 inch diameter.



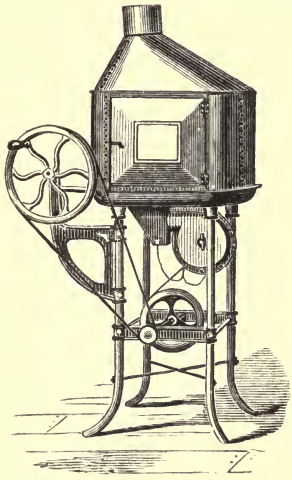
Forge No. 2½, with Lever.

No. 3 is the same style as No. 2½, only a larger size.

No. 2½ will produce a quick welding heat on iron 1½ inches diameter; No. 3 on iron 2 inches diameter, and heavier if desired.

Forges from No. 2½ to 4 can be used by hand or for power.

FORGE NO. 1, WITH CLOSE HOOD.



Upon Forges Nos. 1 and 2 a close hood is placed. This hood is a strongly-made sheet-iron box or oven, completely enclosing the fire-pan, having on each side a door for manipulating the fire, etc. The close hood prevents the escape of sparks, fumes, or smoke, and is generally preferred by jewellers, dentists, etc. Also, for annealing or refining metals. Many other light-metal workers, such as locksmiths, etc., order this style. The close hood is placed on any of the Forges when specially ordered.

BLACKSMITHS' FORGES.

ROTARY.

	Height.	Size of Fire-Pan.	Weight.	Diam. of Fan.	Price.
No. 1	30 in.	17x20 in.	85 lbs.	6 in.	$27 00
" 1, with Hood	30 "	17x20 "	88 "	6 "	30 00
" 2	30 "	20x24 "	98 "	8 "	35 00
" 2, with Hood	30 "	20x24 "	104 "	8 "	40 00
" 2½	25 "	21x27 "	130 "	8 "	44 00
" 2½, with Hood	25 "	21x27 "	140 "	8 "	50 00
" 3	25 "	24x30 "	140 "	9 "	50 00
" 3, with Hood	25 "	24x30 "	150 "	9 "	56 00

LEVER.

	Height.	Size of Fire-Pan.	Weight.	Diam. of Fan.	Price.
No. 2½, with Lever	25 in.	21x27 in.	140 lbs.	8 in.	$50 00
" 2½, with Lever and Hood	25 "	21x27 "	150 "	8 "	56 00
" 3, with Lever	25 "	24x30 "	150 "	9 "	60 00
" 3, with Lever and Hood	25 "	24x30 "	160 "	9 "	66 00
" 4, with Lever	25 "	30x40 "	185 "	9 "	70 00
" 4, with Lever and Hood	25 "	30x40 "	200 "	9 "	78 00

BLACKSMITHS' FORGES—CONTINUED.

POWER.

	Height.	Size of Fire-Pan.	Weight.	Diam. of Fan.	Price.
No. 2½, with Hood, for Power.	25 in.	21x27 in.	140 lbs.	8 in.	$50 00
" 3 " " ..	25 "	24x30 "	150 "	9 "	60 00
" 4 " " ..	25 "	30x40 "	200 "	9 "	75 00
" 5 (Oval).....	22 "	36x54 "	550 "	9 "	145 00
" 6 (Circular).....	22 "	54x54 "	600 "	9 "	160 00

JEWELLERS' FORGES.

	Height.	Size of Fire-Pan.	Weight.	Diam. of Fan.	Price.
No. 1, with Close Hood.....	30 in.	17x20 in.	94 lbs.	6 in.	$34 00
" 2 " "	30 "	20x24 "	110 "	8 "	45 00
Riveting Forge.....			200 "	9 "	75 00
Navy Forge (wrought-iron box)..	22 "	22x27 "	200 "	9 "	80 00

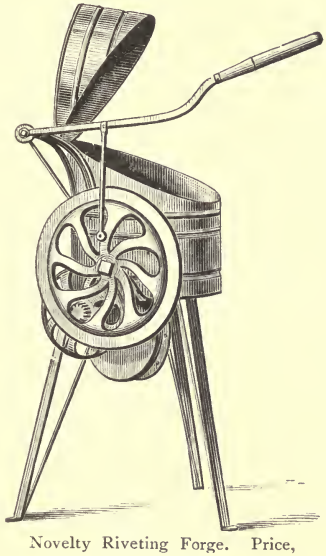
FAN-BLOWERS.

	Diameter.	Price.
No. 1. For Round Belt.....	6 inches.	$8 00
" 2. " " "	8 "	10 00
" 3. " " "	9 "	12 00
" 4. " " "	10 "	14 00
" 6. " 1 inch Flat Belt.....	16 "	25 00

ROTARY POSITIVE PRESSURE BLOWERS.

Capacity.	Diameter.	Maximum Speed per Minute.	Discharge at Maximum Speed per Minute.
No. 1. Blow Pipes, etc.....	12 inches.	100 revolutions.	27 cubic feet.
" 2. 1 Smith's Fire.....	20 "	" "	90 "
" 3. 3 " "	28 "	" "	277 "
" 4. 5 " "	35 "	" "	520 "
" 5. 13 " "	46 "	" "	1184 "
" 6.	56 "	" "	2256 "
" 7.	66 "	" "	3835 "
" 8.	76 "	" "	6016 "

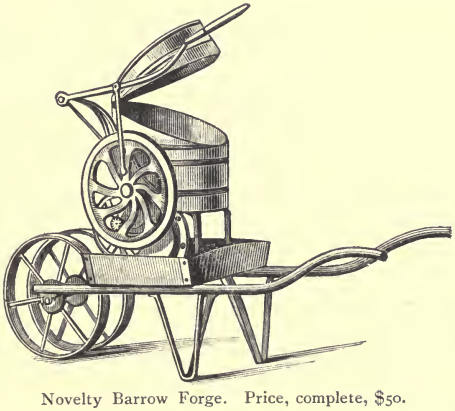
THE NOVELTY PORTABLE FORGES.



Novelty Riveting Forge. Price, complete, $30.

The advantages claimed in the Novelty Forges over all others are: 1st. It has a noiseless pressure-fan, which is arranged upon new principles, whereby it gives pressure as well as blast when desired. The fan is driven by a friction-gear, which is covered and is out of the way. 2d. It has no belt to break, shrink, or mend, nor cogs to create a noise. 3d. The driving-wheel is worked by lever-power, which is the most natural and easiest for a man or boy in working at the forge. 4th. The blast from the fan enters an air-chamber, where it becomes heated before it enters the tuyere-plate, and has many great advantages over other fans. On the inside of the air-chamber it has a funnel-shaped hopper, connected at the bottom with a valve, by which means the Forge can be cleaned of fire, coal, or ashes in a moment. (When it is desired to use anthracite coal, a grate is substituted for the tuyere-plate.)

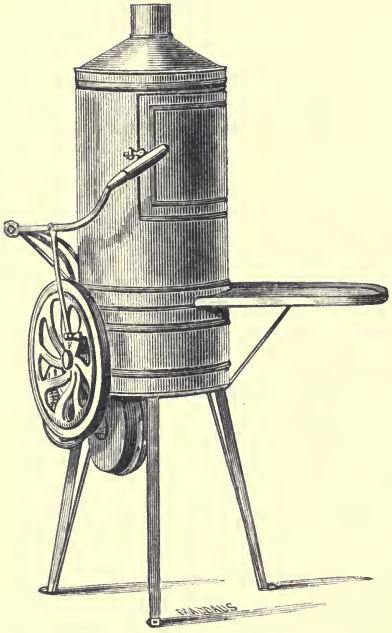
One important feature in the Novelty Forge is the *Loose Fire-Pot*, which in expansion and contraction, or by burning out, does not in the least affect the Forge, as the fire-pot can be replaced by the manufacturer, or duplicated at any foundry, at small expense.



Novelty Barrow Forge. Price, complete, $50.

The Novelty Forges are round, and are manufactured wholly of wrought, boiler, and malleable iron. The legs are of rod-iron, are constructed without bolt or nuts, and can be unshipped in a moment, if desired, for transportation.

NOVELTY FORGE FOR JEWELLERS, DENTISTS, AND OTHER FINE-METAL WORKERS.



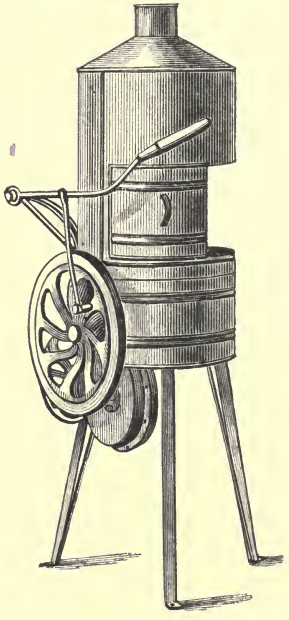
Novelty Forge for Jewellers, etc. Price, complete, $50.

This is the only Forge manufactured that possesses all the requisites for fine-metal workers. It has a firebrick-lined cupola for smelting purposes, a spider for crucibles to rest upon, and a cup at bottom of funnel-shaped hopper for saving of metal when crucible breaks. Where room is scarce, the Forge can be used as a stove. The rotary fan is noiseless, is driven by one-inch belt, and belt can be removed or tightened in a moment by turning a set screw.

NOVELTY FORGE FOR LOCKSMITHS.

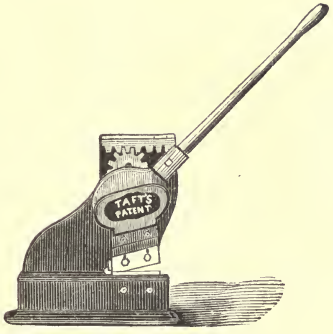
This Forge is constructed on the same principle as the Riveting and Barrow Forge, with a hood and two sliding doors, which, if required, can be used as a closed hood Forge for annealing steel or other metal. This Forge is adapted for all kinds of light work, such as locksmiths, die-sinkers, model-makers, plumbers, and brass-finishers.

A firebrick-lined pot for smelting purposes, and an iron pot for annealing, furnished with this forge when ordered. Price, $15 extra.



No. 1 Novelty Forge. Price, complete, $35.

SHEARS AND PUNCHES.

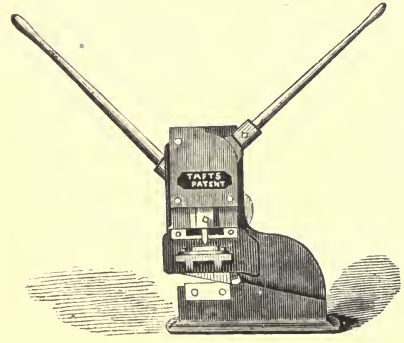


PATENT HAND SHEARS.

Nos.	Will cut Plate Iron	Length of Blades.	Price.
1	1/8 in. thick.	3 inches.	$25 00
2	3/16 "	4 "	45 00
3	1/4 "	5 "	75 00
4	5/16 "	7 "	105 00
5	3/8 "	8 "	145 00
6	7/16 "	9 "	208 00

PATENT HAND PUNCHES.

Nos.	Will Punch Plate Iron	Size of Hole.	Distance from edge of plate to centre of hole.	Price.
1	1/8 in. thick.	1/8 in.	2 1/2 in.	$25 00
2	3/16 "	3/16 "	2 1/2 "	45 00
3	1/4 "	1/4 "	3 "	75 00
4	5/16 "	5/16 "	4 "	105 00
5	3/8 "	3/8 "	6 1/2 "	145 00
6	7/16 "	7/16 "	6 1/2 "	208 00
7	1/2 "	1/2 "	6 1/2 "	277 00
8	9/16 "	9/16 "	6 1/2 "	345 00

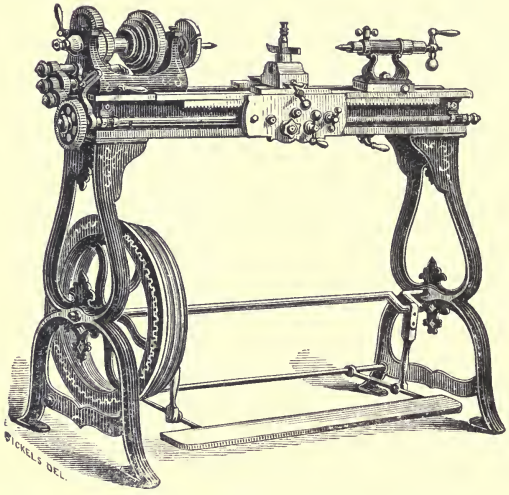


PATENT COMBINED SHEAR AND PUNCH.

Nos.	Will Cut and Punch Plate Iron	Distance from Edge.	Price.
1	1/8 in. thick.	1 1/4 inches.	$48 00
2	3/16 "	1 3/8 "	83 00
3	1/4 "	1 1/2 "	138 00
4	5/16 "	1 1/2 "	195 00
5	3/8 "	2 "	264 00

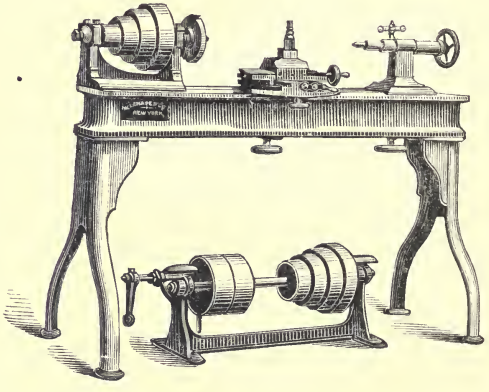
TURNING LATHES.

SCREW-CUTTING FOOT LATHE.

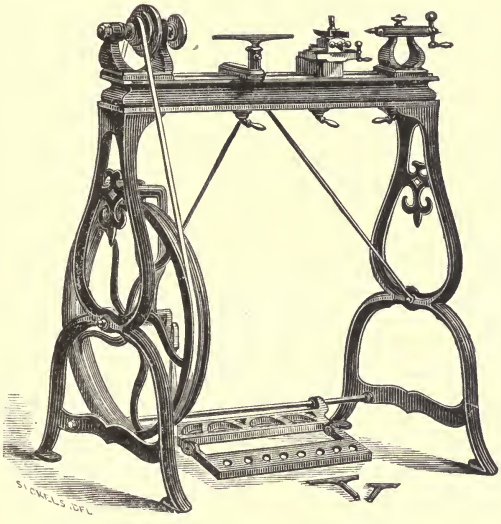


Swings 10 inches diameter, turns from 28 to 40 inches long. This Lathe has self-acting feeding and screw apparatus, back gear in the head for slow speeds, etc.

FIFTEEN-INCH HAND LATHE, WITH COMPOUND SLIDE-REST AND HOLLOW SPINDLE.



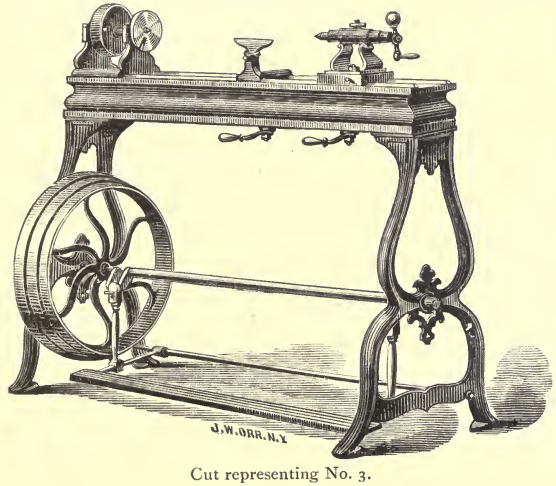
This Lathe swings 15 inches over shears, bed 5 feet long, takes between centres 3 feet. Head spindle is cast-steel, with 1⅝ inch bearing, 4 inches long, extending back to the hub of pulley. Size of cone pulleys, 4½, 6, 7½, and 9 inches; is run by a 2-inch belt. Spindle is bored hollow its entire length, so that screws or other small articles can be made direct from a rod passed through the spindle. Has a compound slide-rest, which will work on every point of the circle; has, when desired, an outside face-plate and rest-stand, so that a wheel pattern 6 feet or over in diameter may be turned. The whole forming in itself a very complete tool for the machine-shop, brass-finishers', or pattern-makers' use. Weight, about 600 lbs.



Cut representing 1, 1½, 2, 2½.

LATHE No. 1.—Swings six inches, and turns twenty-two inches long. This Lathe is perfectly adapted for turning in wood or metals, also drilling, boring, polishing, sawing, etc. The legs, bed, balance-wheel, cone-pulley, head and tail stocks, and treadle are made of cast-iron; the spindles are cast-steel. The spindle runs in boxes, which can be tightened up as they wear. The balance-wheel has three sizes for change of speed. The hand-rest, slide-rest, and tail-stock are held in place by cam fastenings. This Lathe is painted and varnished in plain but good style. The pieces which accompany it without extra expense are two pointed centres, one spur centre, face-plate turned and polished, three T rests, one nine inches long, one six inches, and one three inches long. The treadle is provided with a joint to avoid injury to the feet, should they get under it while in motion.

LATHE No. 1½.—Swings eight inches diameter, turns twenty-two inches long. This Lathe is of the same description as No. 1; it differs only in the swing.



Cut representing No. 3.

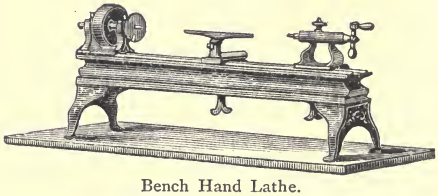
LATHE No. 2.—Swings six inches, and turns twenty-two inches long. This Lathe differs from No. 1 only in having hardened steel conical bearings, and in being very highly finished.

LATHE No. 2½.—Swings eight inches, and turns twenty-two inches long. This Lathe differs from No. 2 only in swing.

LATHE No. 3.—Swings ten inches,

and turns as ordinarily made 31 inches. The length of bed can be varied up to six feet long. Brackets and shelf are attached to the back or beneath the bed of the Lathe. This Lathe can be used as a Bench Lathe, with counter-shaft overhead, by setting the bed on short legs.

LATHE No. 4.—Same as No. 3, with hardened steel conical bearings.
Nos. 3 and 4 are also made with back-geared head-stock, when required.



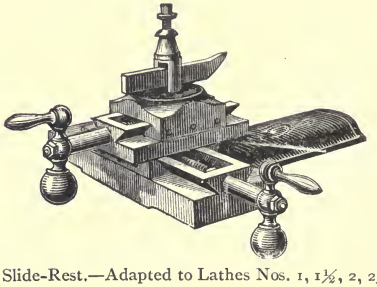
Bench Hand Lathe.

Either of the Lathes herein illustrated may be fitted with short legs instead of the table containing the foot-motion, and thus are adapted to placing upon a bench or stand. In such cases, a counter-shaft is supplied for running the Lathe by power.

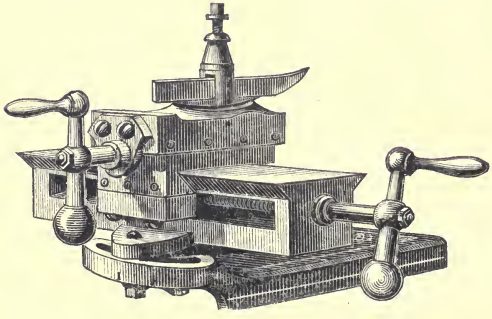
We keep constantly on hand a variety of other Turning Lathes, prices of any of which will be sent on application.

SLIDE-RESTS.

These tools are provided with two slides placed at right angles with each other, carrying a tool which may be drawn back and forth or sideways by means of screws, allowing any position for the turning tool. It is worked by hand, and will turn straight or tapering, and face or square up surfaces.



Slide-Rest.—Adapted to Lathes Nos. 1, 1½, 2, 2½.

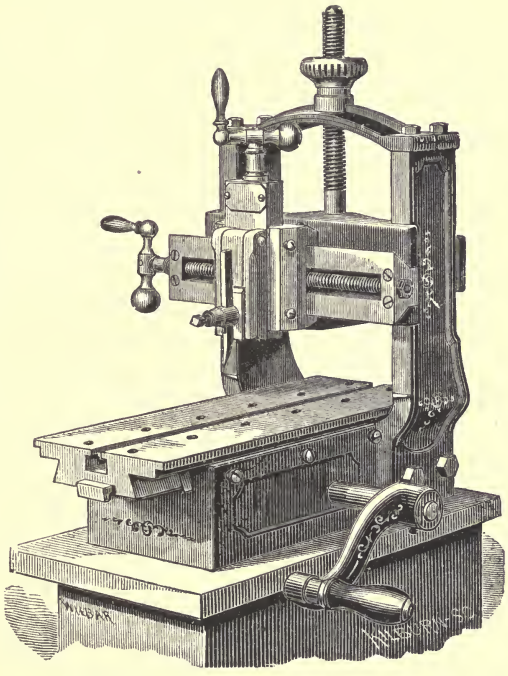


Slide-Rest.—Adapted to Lathe No. 3.

HAND PLANER.

As an auxiliary to the Turning Lathe, the Hand Planer is a valuable machine. Small dies, pieces of steel, iron, brass, etc., can be accurately planed up on the face or sides at any angles. The cut represents such a machine, capable of planing 6½ inches square, and 15 inches long. The cross-head turns and fastens at any angle for planing bevels. It is well made, and price moderate.

Price, ... $75 00
Chuck for holding pieces, if desired (extra), 12 00
Tools, each, . . 35



THE DRILL COLLET

Is a cheap device for holding common drills. It screws on the spindle of the Lathe.

THE BIT-SHANK COLLET

Has a square hole for holding centre-bits, pieces of wood, bone, or ivory, or any article it is desired to turn.

THE DRILL-REST

Is inserted in the end of the tail-stock spindle, to press against the work, and thus save the spindle.

THE CROTCHED CENTRE

Is used to hold a round piece of steel, iron, etc., while drilling through from side to side.

THE BACK OR CENTRE REST

Has three slides or jaws, moving towards the centre, and sits vertically upon the Lathe. It is used to hold work from springing, or to serve as a bearing when drilling into the end of a piece of wood or iron.

LATHE-WHEELS.

Flat or plain iron wheel, ... $8 00
Grooved (with 4 speeds) wheel, ... 16 00

The above includes the crank, centre-screws, and hook.

PRICE-LIST.

LATHES NOS. 1, 1½, 2, AND 2½.

Lathe No. 1, foot-motion, swing 6 inches,	$60 00	Drill Collet,	$1 00
Lathe No. 1½, foot-motion, swing 8 inches,	62 50	Bit-shank Collet,	1 00
Lathe No. 2, foot-motion, swing 6 inches,	67 50	Set of Drills, $\frac{1}{16}$ to $\frac{3}{8}$,	1 75
Lathe No. 2½, foot-motion, swing 8 inches,	70 00	Drill Pad,	1 20
Back-Rest,	2 00	Crotched Centre,	1 50
Face-Plates, rough turned,	40	Slide-Rest,	15 00
Drill Chuck (steel),	2 00	Tools for Slide-Rest, each,	35
		Gig Saw,	35 00
		Extra charge for boxing, if necessary,	2 50

LATHE NO. 3.

Lathe four feet long,	$105 00	Drill Pad,	$1 40
Same with Back-geared Head,	130 00	Set of six Drills,	1 75
Extra length of Bed per foot,	8 00	Back-Rest,	2 50
Drill Chuck (steel),	2 00	Slide-Rest,	28 00
Face-Plates, rough turned,	75	Tools for Slide-Rest, each,	45
Crotched Centre,	1 60	Extra charge for boxing, if necessary,	3 00

LATHE NO. 4.

Lathe four feet long,	$110 00	Extra length of Bed, per ft.,	$8 00
Same with Back-geared Head,	135 00		

BENCH LATHES.

No. 1½, swing 6 inches, 3 ft. Bed, with counter-shaft,	$55 00	No. 3, swing 10 inches, 4 ft. Bed, with counter-shaft,	$90 00
No. 2½, swing 8 inches, 3 ft. Bed, with counter-shaft,	60 00	Fifteen-inch Hand Lathe, Hollow Spindle,	130 00
		With Compound Slide-Rest,	180 00

ENGINE LATHE WITH FOOT-POWER.

Price, with four-foot Bed,	$270 00	For Appurtenances, see list of Chucks, Lathe-dogs, Drills, etc.	
Additional per ft. for extra length of Bed,	10 00		

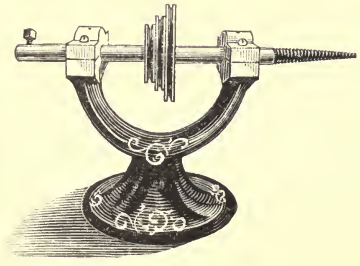
TURNING TOOLS.

1-inch Chisel,	$0 65	⅜-inch Point Tool,	$0 50
½-inch "	55	¾-inch Round Point,	85
¾-inch Gouge,	65	⅜-inch " "	50
⅜-inch "	55	Parting Tool,	50
¾-inch Point Tool,	65	Graver,	45

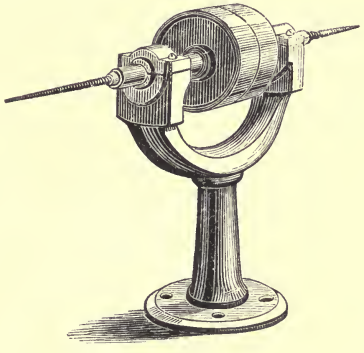
STEEL ARBORS.

For holding Cutters, Emery-Wheels, Grindstones, Brush-Wheels, etc., $1 50, $2, $2 50 each.

POLISHING HEADS.



No. 1.



No. 2.

No. 1. For Foot Power,	$8 00
" 2. " Steam "	15 00

The No. 1 Head has one end taper screw, and the other hollow, with a set screw for holding an extra taper-screw, chuck, or drills, etc.

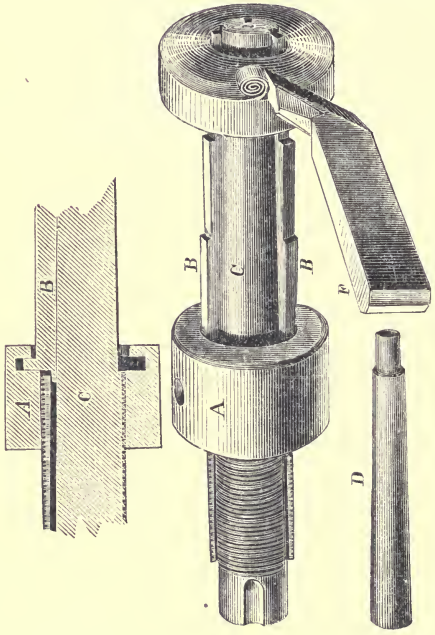
The No. 2 Head is made with hollow ends, into which the taper-screws are screwed; so that they can be removed at any time and chucks substituted.

One or both ends are also made with straight screws, with nuts and washers for carrying emery-wheels, etc., if so ordered.

Small Polishing Heads for Watchmakers, with double screw, each,	$5 00
Tables for Polishing Heads, each,	6 00
Flat Driving Wheel fitted on crank, centres, and Hook,	8 00
Grooved Driving Wheel with four speeds fitted on crank, centres, and Hook,	16 00
Catgut Belt, and Hooks,	1 00

TOOLS.

LE COUNT'S EXPANDING MANDREL OR ARBOR.



These Mandrels are made of steel, and are strong and true. They are much more convenient than those driven by the hammer, and do better work. All the working parts are hardened and well proportioned.

EXPLANATION OF CUT.

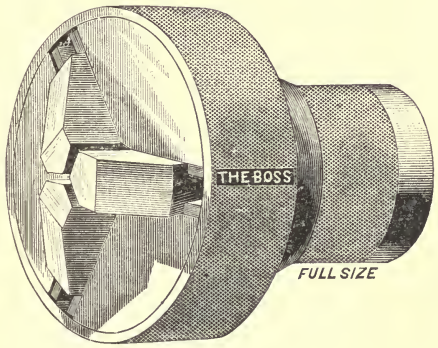
C is the steel Mandrel; B B are two of the three keys that are drawn up and pushed down by the nut. A groove is turned inside the nut, A, which catches the head of the key, B, and thus draws them up to tighten the work. In the outside of the nut, A, is a taper hole, which the pin, D, fits, and answers for a wrench. This, like any Mandrel, requires a true hole to make a true job. Very heavy cuts on large diameters can be done on it without slipping. F represents the tool operating on a piece of work.

PRICES.

No. 1, takes any hole from	½	in. to	1	in. inclusive, each,						$12 00
" 2,	"	"	"	1	"	1½	"	"		16 00
" 3,	"	"	"	1½	"	2	"	"		20 00
" 4,	"	"	"	2	"	3	"	"		40 00
" 5,	"	"	"	3	"	4	"	"		60 00

CHUCKS.

CUSHMAN'S CHUCKS.



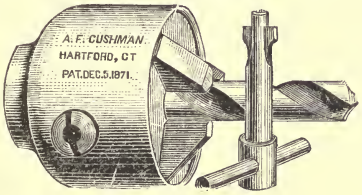
Patented December 24, 1872.

THE BOSS DRILL CHUCK.

This is warranted to be one of the best and most perfect Chucks in use. It holds from 0 to $\frac{3}{8}$ in. diameter, and is truly the "Boss Chuck." Every piece is made of forged steel, and finished to a gauge.

Price, ... $8 00

NEW PATENT DRILL CHUCK.

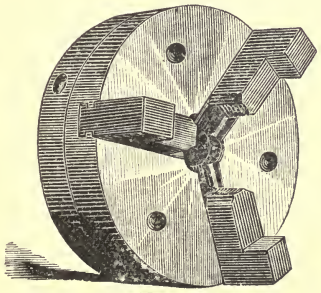


No. 7.

This Chuck is very compact, strong, and durable. It holds from $\frac{1}{64}$ to $\frac{1}{2}$ inch.

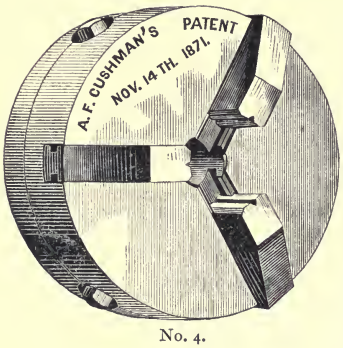
Price, ... $10 00

COMMON LEVER SCROLL CHUCK.



No. 2.

6	inches	diameter, price,	$18 00
9	"	"	24 00
12	"	"	30 00
15	"	"	36 00
18	"	"	45 00
21	"	"	60 00



No. 4.

PATENT GEARED SCROLL CHUCK.

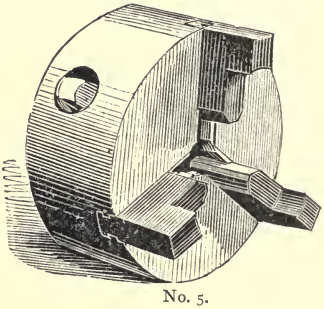
This Chuck is made for screw-machines, and having three pinions, is always ready for the wrench without moving it around on the Lathe. In case a pinion breaks, the chuck can be used while a new one is being made, as any one of the three pinions will operate the chuck.

Diameter,	3 in.	4 in.	5 in.	6 in.	9 in.
Price,	$13 00	16 00	18 00	22 00	27 00

GEARED SCROLL CHUCKS.

Operated with a key, made strong and durable.

3 in.	diameter, each,	. . .	$12 00
4 "	" "	. . .	15 00
5 "	" "	. . .	17 00
6 "	" "	. . .	20 00
9 "	" "	. . .	24 00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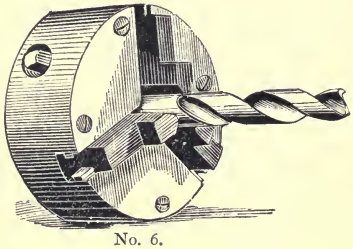
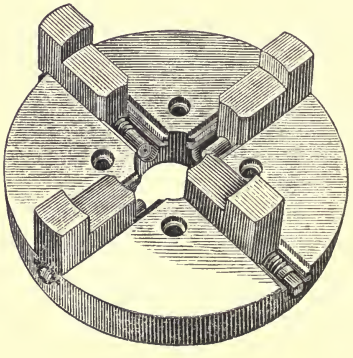

No. 6.

Chuck No. 6 same price as No. 5.

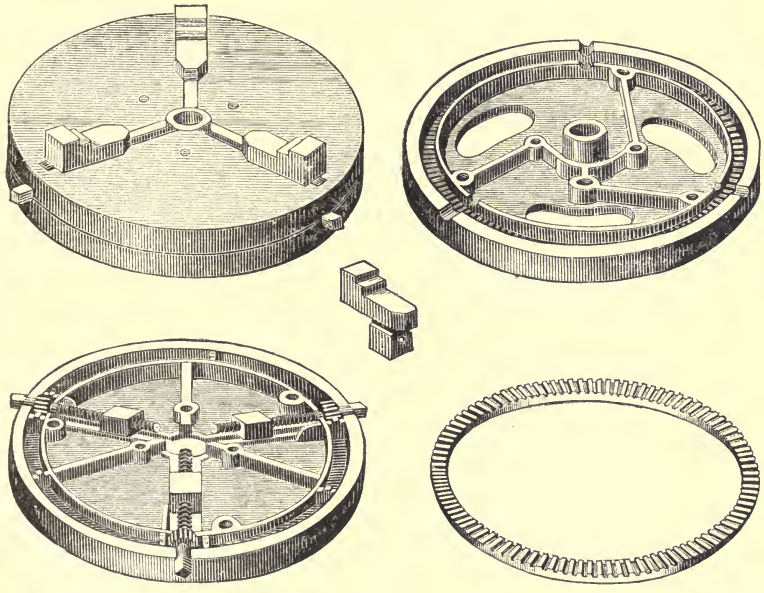
For Cushman's Chucks with four jaws add 10 per cent. to the list.

CUSHMAN'S NEW IMPROVED INDEPENDENT JAW CHUCK.

9 inches	diameter, price,	. .	$30 00
12 "	" "	. .	35 00
15 "	" "	. .	42 00
20 "	" "	. .	60 00
24 "	" "	. .	75 00



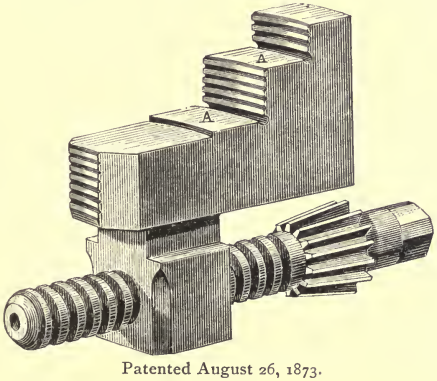
HORTON'S LATHE CHUCKS.



E. HORTON'S PATENT LATHE CHUCK, COMPLETE AND IN PARTS.

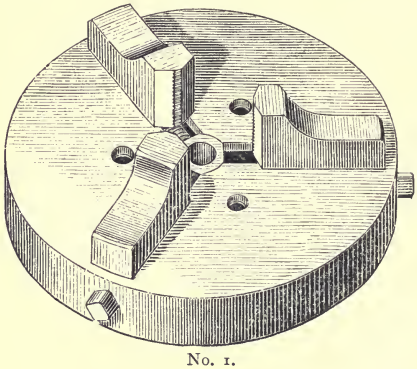
By enclosing the circular wrought-iron rack in the deep groove in the back plate, and then turning the centre faces of back and front plates true, a perfectly tight casing for the gearing is made, thus preventing the ingress of dirt, chips, etc. Remove the rack, especially from the four jaws, and an independent jaw-chuck is made, thus combining two chucks in one.

E. HORTON'S IMPROVED CHUCK JAWS.



Patented August 26, 1873.

A raised seat, A A, is introduced on the face of the jaws, on which the work rests while turning. A groove or recess, formed in the corner of the bite and face of the jaw, removes and rounds out the same. An emery-wheel may be used for grinding off the raised parts, A A, so that work coming to a sharp corner will rest on the ground seat, A, and the bite of the jaw only, and assume a true position thereon.



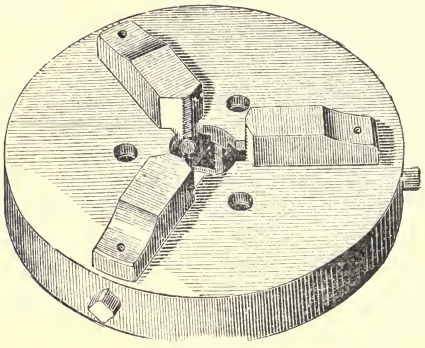
No. 1.

E. HORTON'S PATENT REVERSE JAW CHUCK.

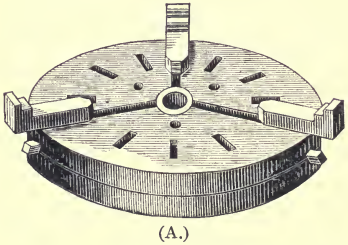
The best Twist Drill Chuck in the market. Also used for holding work to file, etc., in place of dogs and centres. It is made 4, 6, 9, and 12 inches diameter.

E. HORTON'S INSIDE JAW CHUCK.

The jaws project ½ inch from the face of the chuck, and pass into a hole in the centre 1¼ inch diameter, allowing a pipe or rod of that size to pass entirely through the chuck.



No. 2.



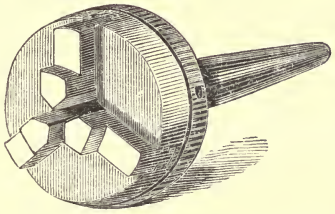
(A.)

In this cut (A.) is presented a view of all chucks made over 12 inches in diameter.

PRICES OF E. HORTON'S LATHE CHUCKS.

THREE JAWS.							FOUR JAWS.						
6 inches diameter and less,						$26 00	6 inches diameter,						$32 00
9	"	"				34 00	9	"	"				42 00
12	"	"				44 00	12	"	"				56 00
15	"	"				52 00	15	"	"				64 00
18	"	"				62 00	18	"	"				75 00
21	"	"				80 00	21	"	"				95 00
24	"	"				100 00	24	"	"				120 00
30	"	"				170 00							
36	"	"				230 00							
For Car Wheels,						250 00							

HENRY WHITON'S CHUCKS.

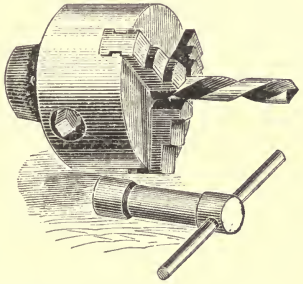


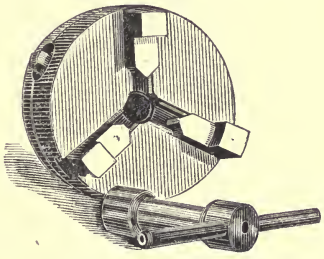
2-inch Lever Scroll Chuck. Price, $7.

This Chuck is used for holding drills, etc.

	3 in.	4 in.	6 in.	9 in.	12 in.	15 in.
PRICES, ...	$9 00	$11 00	$16 00	$24 00	$30 00	$36 00

GEARED SCROLL CHUCKS.





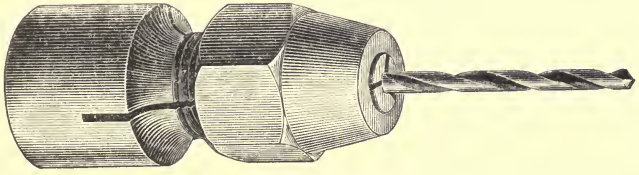
	2 in.	3 in.	4 in.	6 in.
PRICES, ...	$9 00	$12 00	$15 00	$18 00

These Chucks are operated with a gear and pinion. The pinion and arbor are made of one solid piece of steel, and very strong.

INDEPENDENT SCREW CHUCKS.

	6 in.	9 in.	12 in.	15 in.
PRICES, . .	$18 00	$24 00	$30 00	$36 00

CENTRE DRILL CHUCK.

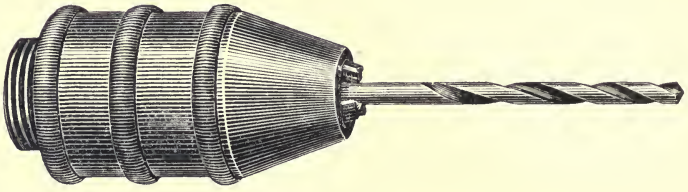


Centre Drill Chuck, with one Drill, each $2 50

Centre Drills, each 25

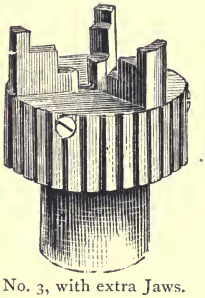
Morse's Adjustable Drill Chuck, holds from $\frac{1}{16}$ to $\frac{5}{8}$ in. diam., each . 6 00

BEACH PATENT DRILL CHUCK.

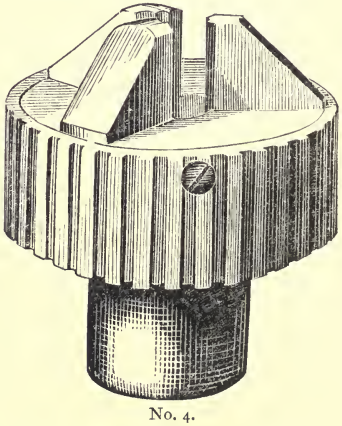


No. 0 holds from 0 to 1/8 inches diameter (for Jewelers), ... $8 00
" 1 " 0 " 1/4 " " 8 00
" 2 " 0 " 3/8 " " 8 50
" 3 " 0 " 1/2 " " 10 00
" 4 " 1/16 " 5/8 " " 11 00

THE VICTOR CHUCK.



No. 3, with extra Jaws.



No. 4.

This Chuck, except the jaws, is made of forged steel; jaws are of tempered cast-steel.

No. 3 holds from 0 to 3/8 inch, each, ... $8 00
Extra Jaws for No. 3, per set, ... 2 00
No. 4 holds from 1/8 to 3/4 inch, each, ... 10 00
Extra Jaws for No. 4, per set, ... 2 50

D. E. WHITON'S GEARED SCROLL CHUCKS.

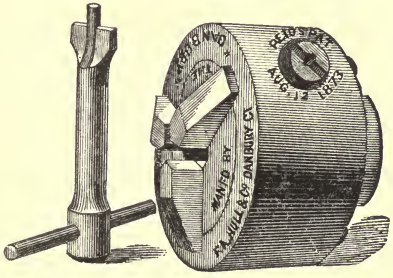
Diameter, . . .	2 in.	3 in.	4½ in.	6 in.	9 in.
Each, ...	$9 00	$12 00	$15 00	$20 00	$26 00

J. R. WASHBURN'S GEARED SCROLL CHUCKS.

Diameter,	2 in.	3 in.	4 in.	5 in.	6 in.	9 in.	14 in.
Each,	$9 00	$12 00	$15 00	$16 00	$18 00	$26 00	$50 00

Also, Lever and Independent Jaw Screw Chucks.

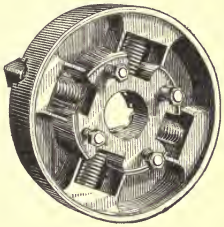
"THE DANBURY" DRILL CHUCK.



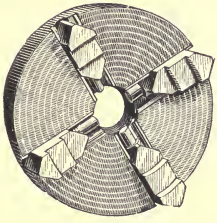
This Chuck is very strong, accurate, and durable. It is operated easily and quickly, and does not clog or set. Each Chuck is warranted. "The Danbury" holds from 0 to $\frac{5}{8}$.

Each, ... $10 00

ONEIDA IMPROVED LATHE CHUCKS.



Back view.



Front view.

Four jaws, independent; pointed at both ends and reversible, as in cuts.

Diameter,	4 in.	6 in.	9 in.	12 in.	15 in.	18 in.	21 in.	24 in.	30 in.
Prices,	$20	$26	$36	$43	$51	$64	$80	$100	$170

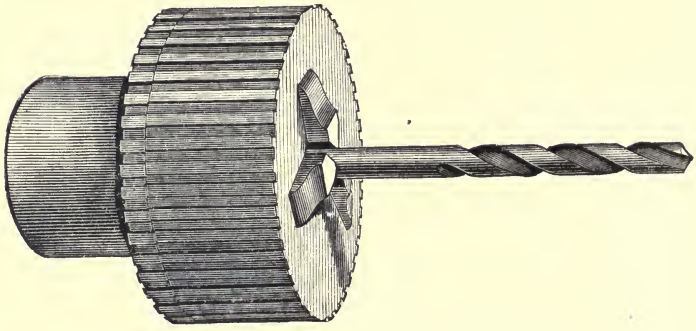
FOUR JAWS UNIVERSAL.

Diameter,	4 in.	6 in.	9 in.	12 in.	15 in.	18 in.	21 in.	24 in
Prices,	$22 50	$26	$36	$43	$51	$64	$80	$100

DRILL CHUCKS.

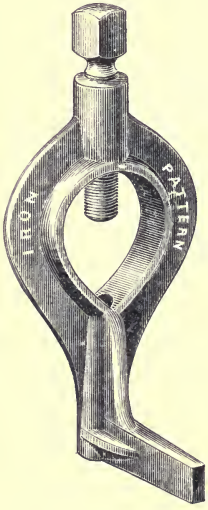
Diameter,	3 in.	4 in.	6 in.
Prices,	$11 00	$13 00	

THE WARWICK DRILL CHUCK.



No. 1, holds from $\frac{3}{8}$ in. to 0, price, $6 00.
" 2, " $\frac{3}{4}$ " $\frac{5}{16}$ in., " 8 00.

LE COUNT'S PATENT HOLLOW LATHE DOG OR CARRIER.



These Dogs are made of strong malleable iron. They are light and thin, so that the tool can be used close to the centre. The screws are hardened and tempered, and are made to fit the boxes perfectly.

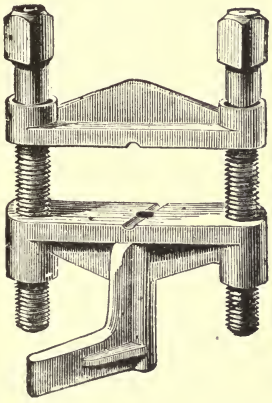
Nos.	1	2	3	4	5	6	7	8
	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	$\frac{3}{4}$ in.	1 in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.	$1\frac{3}{4}$ in.	2 in.
Price each,	45 cts.	45 cts.	60 cts.	70 cts.	90 cts.	$1 00	$1 20	$1 40

Price of a set from No. 1 to 8, $6 50.

Nos.	9	10	11	12
	$2\frac{1}{2}$ in.	3 in.	$3\frac{1}{2}$ in.	4 in.
Price each,	$1 75	$2 00	$2 40	$2 70

Price of a set from No. 9 to 12, $8 85.

LE COUNT'S PATENT CLAMP DOG.



Used for finished work, and many other purposes. They are well made, and of four sizes, taking anything close to the sizes given.

PRICES.

No. 1, 1 inch between the screws, . .	$1 00
" 2, 1½ " " " . .	1 20
" 3, 2 " " " . . .	1 60
" 4, 3 " " " . . .	2 00
Set of four, price, ...	5 25

PRICE OF A FULL SET OF DOGS.

No. 1 to No. 12, or ⅜ in. to 4 in. inclusive, ...	$15 00
5-inch dog, ...	4 00
6-inch "	5 00
¼-inch "	45
SMALL CLAMP DOGS, each, ...	65
MALLEABLE IRON DOGS, plain, 1 inch and smaller, each, . .	40

MORSE TWIST DRILL AND MACHINE COMPANY.

STRAIGHT LIP INCREASE TWIST DRILL.

Bit Stock.

STRAIGHT SHANKS.

Diam. of Drills	Length in inches.	Price per Dozen.	Price each.
1/16	2 1/2	$1 20	11
5/64	2 5/8	1 30	12
3/32	2 3/4	1 40	13
7/64	2 7/8	1 60	14
1/8	3	1 80	16
9/64	3 1/8	2 00	18
5/32	3 1/4	2 20	20
11/64	3 3/8	2 45	22
3/16	3 1/2	2 70	24
13/64	3 5/8	3 00	26
7/32	3 3/4	3 30	29
15/64	3 7/8	3 60	32
1/4	4	3 95	35
17/64	4 1/8	4 30	38
9/32	4 1/4	4 60	40
19/64	4 3/8	4 95	43
5/16	4 1/2	5 30	46
21/64	4 5/8	5 70	50
11/32	4 3/4	6 20	54
23/64	4 7/8	6 70	58
3/8	5	7 20	62
25/64	5 1/8	7 70	66
13/32	5 1/4	8 10	70
27/64	5 3/8	8 45	74
7/16	5 1/2	8 80	78
29/64	5 5/8	9 20	82
15/32	5 3/4	9 65	86
31/64	5 7/8	10 10	90
1/2	6	10 55	94

The above comprises the Jobber's and Machinist's Sets.

For very exact work, a gauge plainly marked should accompany an order.

Drills of Taper length with 1/2 inch Straight Shank, same price as Turned Drills.

STUBS' STEEL WIRE GAUGE,

STRAIGHT SHANKS.

Numbers by Gauge.	Length in inches.	Price per Dozen.	Price each.
1 to 5	4	$2 35	22
6 " 10	3 1/16	2 25	21
11 " 15	3 1/2	2 15	20
16 " 20	3 1/4	2 05	19
21 " 25	3 1/16	1 95	18
26 " 30	2 13/16	1 75	16
31 " 35	2 5/8	1 55	15
36 " 40	2 7/16	1 35	14
41 " 45	2 1/4	1 25	13
46 " 50	2 1/16	1 15	12
51 " 65	1 3/4	1 15	11

No. 2	measures . .	7/32 inch.
" 12	" . .	3/16 "
" 21	" . .	5/32 "
" 28	" . .	9/64 "
" 31	" . .	1/8 "
" 35	" . .	7/64 "
" 43	" . .	3/32 "
" 48	" . .	5/64 "
" 53	" . .	1/16 "
" 56	" . .	3/64 "
" 61	" . .	1/32 "

BIT-STOCK DRILLS.

Diam. of Drills.	Price per Dozen.	Price each.
1/16	$1 75	15 cts.
3/32	2 00	20 "
1/8	2 50	25 "
5/32	3 00	30 "
3/16	3 50	35 "
7/32	4 25	40 "
1/4	5 00	45 "
9/32	5 75	50 "
5/16	6 50	60 "
11/32	7 50	65 "
3/8	8 50	75 "
13/32	9 50	85 "
7/16	10 75	95 "
15/32	12 00	1 05 "
1/2	13 25	1 15 "

Price per set, 1/16 to 1/4 by 32ds, 1/4 to 3/8 by 16ths, boxed, $3 10.

TWIST DRILLS—Continued.

TURNED DRILLS, TAPER OR STRAIGHT SHANKS.

Patent Increase Twist and American Standard Drills.

Turned Drill.

No. of Sock't for St'n'd Taper	Diam. of Drills	L'ngth in inches	Price each	No. of Sock't for Morse Taper
No. 1, $1 35.	1–4	6⅛	$0 65	No. 1, $1 40.
	9–32	6¼	70	
	5–16	6⅜	75	
	11–32	6½	80	
	3–8	6¾	85	
	13–32	7	90	
	7–16	7⅛	1 00	
	15–32	7½	1 10	
No. 2, $1 55.	1–2	7¾	1 20	
	17–32	8	1 30	
	9–16	8¼	1 40	
	19–32	8½	1 50	
	5–8	8¾	1 65	No. 2, $2 20.
No. 3, $2 10.	21–32	9	1 80	
	11–16	9¼	2 00	
	23–32	9½	2 20	
	3–4	9¾	2 40	
	25–32	9⅞	2 60	
	13–16	10	2 80	
	27–32	10¼	3 00	
	7–8	10½	3 20	
	29–32	10⅝	3 40	
	15–16	10¾	3 60	
No. 4, $2 65.	31–32	10⅞	3 80	No. 3, $3.
	1	11	4 00	
	1 1–32	11⅛	4 20	
	1 1–16	11¼	4 40	
	1 3–32	11⅜	4 60	
	1 1–8	11¾	4 80	
	1 5–32	11⅞	5 00	
	1 3–16	12	5 25	
	1 7–32	12⅛	5 50	
	1 1–4	12½	5 75	

No. of Sock't for St'n'd Taper	Diam. of Drills.	L'ngth in inches	Price each	No. of Sock't for Morse Taper
No. 5, $4 40.	1 9–32	14⅛	$6 00	No. 4, $4 40.
	1 5–16	14¼	6 25	
	1 11–32	14⅜	6 50	
	1 3–8	14½	6 75	
	1 13–32	14⅝	7 00	
	1 7–16	14¾	7 25	
	1 15–32	14⅞	7 50	
	1 1–2	15	7 75	
	1 17–32	15⅛	8 00	
	1 9–16	15¼	8 25	
	1 19–32	15⅜	8 50	
	1 5–8	15½	8 75	
	1 21–32	15⅝	9 00	
	1 11–16	15¾	9 25	
	1 23–32	15⅞	9 50	
	1 3–4	16	9 75	
	1 25–32	16⅛	10 25	
	1 13–16	16¼	10 50	
	1 27–32	16⅜	10 75	
	1 7–8	16½	11 00	
	1 29–32	16⅝	11 25	
	1 15–16	16¾	11 50	
	1 31–32	16⅞	11 75	
	2	16½	12 00	

The above we make by 64ths, if ordered.

To prevent confusion in filling orders, parties ordering will please state which taper is desired.

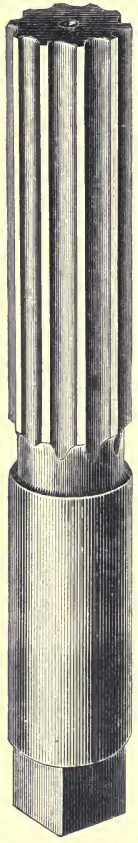
Straight Shank Drills, Taper Lengths, at Taper Shank prices.

The Standard Taper corresponds with the Manhattan Taper.

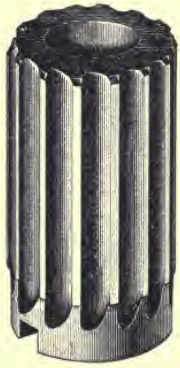
Drills of any size or length, with Straight or Taper Shanks, made to order, and to fit any socket desired.

PRICES OF DRILLS PER SET.

	Patent Inc. Twist Drill.	Am. St'n'd Taper Drill Sockets.
No. 1. Set of Taper Shank Drills, ¼ to 1 in., varying by 16ths,	$25 00	
No. 2. Set of Taper Shank Drills, ⅜ to 1¼ in. in diameter, varying by 16ths,	44 00	
No. 3. Set of Taper Shank Drills, ⅜ to ¾, varying by 32ds, ¾ to 1¼ in. in diameter, varying by 16ths,	53 00	
No. 4. Set of Taper Shank Drills, ⅜ to ¾, varying by 32ds, and from ¾ to 2 in. in diameter, varying by 16ths,	162 00	
No. 5. Set Drills, Straight Shanks, 1-16 to ½ in., mounted, varying by 64ths,	12 75	
No. 6. Set Drills, Straight Shanks, 1-16 to ½ in., mounted, varying by 32ds,	6 50	
No. 7. Set Drills, from 60 to ⅜ in., mounted,	11 00	
No. 8. Set Drills, Steel Wire Gauge, from 1 to 60, mounted,	8 75	
No. 9. Half Set Drills, Steel Wire Gauge, alternate Nos. from 1 to 60, m'd,	4 75	
No. 10. Jeweller's Set Drills, neatly mounted in a mahogany case with cap, containing 36 Drills, from No. 30 (⅛ in.) to No. 65, St'l Wire Gauge,	5 25	
No. 11. Set of Taper Shank Drills, ⅜ to 2 in., by 32ds,	300 00	
Set of Steel Sockets, to hold Drills from ¼ to 1¼ in.,	6 60	$7 75
One large Steel Socket, to hold Drills from 1 5-16 to 2 in. diameter,	4 40	4 40
Adjustable Chuck, holding from 1-16 to ⅝ in., with springs to open jaws,	6 00	
Centre-Drill Chuck,	2 50	
Centre-Drills, 25 cents each; per dozen,	2 75	



Reamer.



Shell Reamer.

REAMERS.

JOBBER'S SET.

Dia. of Reamer	Full Length.	Length of Flute.	Price each.
1/4	4 in.	2 in.	$1 40
5/16	4 1/2	2 1/4	1 55
3/8	5	2 1/2	1 70
7/16	5 1/2	2 3/4	1 90
1/2	6	3	2 10
9/16	6 1/2	3 1/4	2 30
5/8	7	3 1/2	2 50
11/16	7 11/16	3 13/16	2 80
3/4	8 3/8	4 3/16	3 10
13/16	9 1/16	4 1/2	3 40
7/8	9 11/16	4 13/16	3 70
15/16	10 1/4	5 1/8	4 10
1 in.	10 5/8	5 7/16	4 50
1 1/16	11 1/4	5 5/8	4 90
1 1/8	11 5/8	5 13/16	5 30
1 3/16	12	6	5 80
1 1/4	12 1/4	6 1/8	6 30
1 5/16	12 7/16	6 3/16	6 80
1 3/8	12 5/8	6 5/16	7 40
1 7/16	12 13/16	6 3/8	8 00
1 1/2	13	6 1/2	8 70
1 9/16	13	6 1/2	9 40
1 5/8	13	6 1/2	10 10
1 11/16	13 1/2	6 3/4	10 80
1 3/4	13 1/2	6 3/4	11 50
1 13/16	13 1/2	6 3/4	12 50
1 7/8	14	7	13 50
1 15/16	14	7	14 50
2	14	7	15 50

SHORT SET.

Dia. of Reamer	Full Length.	Length of Flute.	Price each.
1/4	3 3/4 in	2 1/4 in	$1 35
5/16	4	2 1/4	1 45
3/8	4 1/4	2 1/4	1 60
7/16	4 1/2	2 5/16	1 75
1/2	4 3/4	2 7/16	1 90
9/16	5	2 9/16	2 00
5/8	5 1/4	2 5/8	2 15
11/16	5 1/2	2 3/4	2 30
3/4	5 3/4	2 15/16	2 50
13/16	6	3 1/16	2 70
7/8	6 3/8	3 3/16	2 95
15/16	6 3/4	3 5/16	3 20
1 in.	7 1/8	3 9/16	3 45
1 1/16	7 1/2	3 3/4	3 70
1 1/8	7 7/8	4	4 00
1 3/16	8 1/4	4 1/4	4 40
1 1/4	8 3/4	4 1/2	4 80
1 5/16	9	4 3/4	5 20
1 3/8	9 1/2	5	5 75
1 7/16	9 3/4	5 1/4	6 30
1 1/2	10	5 1/2	6 85
1 9/16	10 1/4	5 1/2	7 60
1 5/8	10 5/8	5 5/8	8 45
1 11/16	10 3/4	5 5/8	9 30
1 3/4	11	5 3/4	10 00
1 13/16	11 1/4	5 3/4	10 70
1 7/8	11 1/2	5 7/8	11 40
1 15/16	11 3/4	5 7/8	12 20
2	12	6	13 00

SHELL REAMERS.

Dia. of Reamer	Length.	Size Hole.	Price each.	Dia. of Reamer	Length.	Size Hole.	Price each.
3-4	2 1-2 in.	1-2 in.	$1 65	1 11-16	3 1-2 in.	1 in.	$4 60
13-16	"	"	1 65	1 3-4	"	"	5 00
7-8	"	"	1 75	1 13-16	"	"	5 40
15-16	"	"	1 75	1 7-8	"	"	6 00
1 in.	2 3-4 in.	5-8 in.	1 90	1 15-16	"	"	6 60
1 1-16	"	"	1 90	2	"	"	7 25
1 1-8	"	"	2 15	2 1-16	3 3-4 in.	1 1-4 in.	7 75
1 3-16	"	"	2 15	2 1-8	"	"	8 25
1 1-4	"	"	2 40	2 3-16	"	"	8 75
1 5-16	3 in.	3-4 in.	2 70	2 1-4	"	"	9 50
1 3-8	"	"	3 00	2 5-16	"	"	10 25
1 7-16	"	"	3 30	2 3-8	"	"	11 00
1 1-2	"	"	3 60	2 7-16	"	"	11 75
1 9-16	"	"	3 90	2 1-2	"	"	12 50
1 5-8	"	"	4 25				

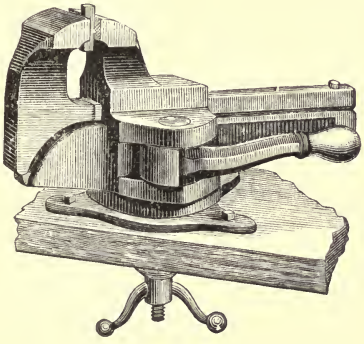
Price per short set, 1-4 to 1 inch, . . $29 25
" " " 1-4 to 1 1-4 inch, . 46 00
" " " 1-4 to 1 1-2 inch, . 70 00
" Jobber's set, 1-4 to 1 inch, . 35 00
" " " 1-4 to 1 1-4 inch, 57 00

Price per Jobber's set, 1-4 to 1 1-2 inch, $88 00
Price Walnut Case for Set 1-4 to 1 inch, $3 75, or 1-4 to 1 1-4 inch, . . . 4 25
Price Walnut Case for set 1-4 to 1 1-2 inch, ... 4 50

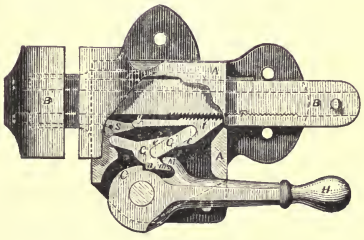
Solid or Shell Reamers of any size or length made to order.

VISES.

STEPHENS' PATENT PARALLEL BENCH VISES.



2-in. Swivel Vise, $4 75.



Shows working parts Cam and Toggle.

2-in. Flat or Stationary Vise, $4.

The above right-hand cut shows the Stephens Flat Vise with top removed, and working parts exposed to view.

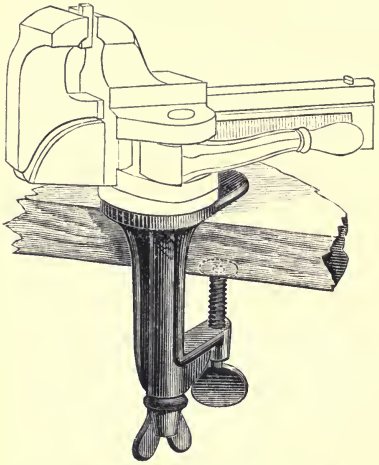
It consists simply of a toggle, G G, and tooth-bar, *t*, held together by a spring, S, all worked by a cam, C, and hook, M, on the handle, H.

A steel rack, T, is inserted in the sliding-bar, B B. The sliding-bar is here seen disengaged, free to slide in or out, with perfect ease, to its extreme limits.

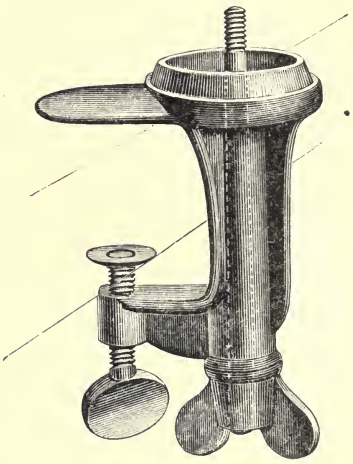
At the first start of the handle outward, the hook, M, slips from the tooth, *m*, and the spring, S, draws down upon the hook at U, firmly setting the tooth-bar, *t*, against the rack, T; as the handle is pulled further outward, the cam is brought to bear against the ridge, *n*, nearly straightening the toggle, and forcing the movable jaw with great power against the object between the jaws.

Jaws 2 inches wide; open 2¼ inches.

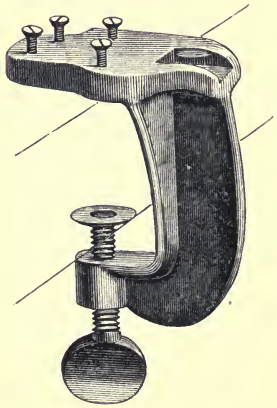
Important.—Occasionally rub *one drop* of oil on the cam, C, and hook, M. Never oil any other part.



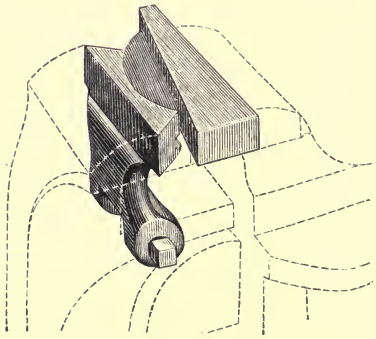
Swivel Vise on the Table-Clamp. Price, $6 75.



Swivel Table-Clamp. Price, $2.



Jewelers' Flat Table-Clamp.
No injury to table.
Price, $1.



2-in. Taper Attachment. Price, $2.

PRICE-LIST OF VISES.

JEWELLERS'.

Width of Jaw.	Style of Vise.	Opens.	W'ght.	Price
2 in.	Flat	2¼ in.	2 lbs.	$4 00
2 in.	Flat, with Anvil	2¼ in.	2 lbs.	4 50
2 in.	Swivel	2¼ in.	3 lbs.	$4 75
2 in.	Swivel, with Anv.	2¼ in.	3 lbs.	5 25
2¾ in.	Flat	3 in.	12 lbs.	$5 50
2¾ in.	Flat Filers'	3 in.	12 lbs.	5 50
2¾ in.	Swivel	3 in.	14 lbs.	$6 50
2¾ in.	Swivel Filers'	3 in.	14 lbs.	6 50
3½ in.	Flat	5 in.	35 lbs.	$9 00
3½ in.	Flat Filers'	5 in.	35 lbs.	9 00
3½ in.	Swivel	5 in.	42 lbs.	$10 50
3½ in.	Swivel Filers'	5 in.	42 lbs.	10 50
4½ in.	Flat	6½ in.	60 lbs.	$12 50
4½ in.	Flat Filers'	6½ in.	60 lbs.	12 50
4½ in.	Swivel	6½ in.	66 lbs.	14 50
4½ in.	Swivel Filers'	6½ in.	66 lbs.	14 50
With Extension Handles:				
5½ in.	Flat	9 in.	110 lbs.	$22 00
6½ in.	Flat	10 in.	160 lbs.	$33 00
5½ in.	Swivel	9 in.	120 lbs.	$26 00
6½ in.	Swivel	10 in.	175 lbs.	$39 00

COACH OR WOOD-WORKERS'.

	Op'ns.	W'ght.	Price.
Flat Vise, with square-faced caps, 4x4½ in., attached	8 in.	43 lbs.	$15 00
Swivel Vise, with square-faced Caps, 4x4½ in., attached	8 in.	50 lbs.	16 50
Flat Vise, with square-faced Caps, 5x5½ in., attached	10 in.	70 lbs.	$20 50
Swivel Vise, with square-faced Caps, 5x5½ in., attached	10 in.	75 lbs.	22 50

JEWELLERS'—NICKEL-PLATED, EXTRA FINISH.

2 inch Flat Vise	$9 00	2 inch Pipe attachment	$3 00
2 inch Flat Vise, with Anvil	9 50	2 inch Flat Table Clamp	2 50
2 inch Swivel Vise	9 75	2 inch Swivel Table Clamp	4 50
2 inch Swivel Vise, with Anvil	10 25	2 inch Vise Caps	1 00
2 inch Taper Attachment	3 00		

VISE ATTACHMENTS.

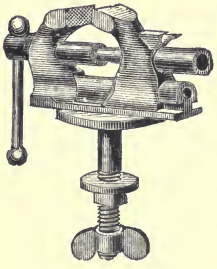
When Vises are ordered *complete*, we add the following Attachments:

2 inch Taper Attachment	$2 00	4½ inch Taper Attachment	$5 50
2¾ " "	2 75	5½ " "	7 50
3½ " "	4 00	6½ " "	10 00
2 inch Pipe Attachment	$2 00	4½ inch Pipe Attachment	$5 50
2¾ " "	2 75	5½ " "	7 50
3½ " "	4 00	6½ " "	10 00
2 inch Brass Vise Caps	$0 50	4½ inch Brass Vise Caps	1 25
2¾ " " "	75	5½ " " "	2 00
3½ " " "	1 00	6½ " " "	2 50
2 in. Flat Table Clamp (no injury to table),	$1 00	2¾ in. Flat Table Clamp (no injury to table),	$2 00
2 in. Swivel " " "	2 00	2¾ in. Sw'l " " " "	3 00

Jewellers' or Wood-Workers' Caps for 2 inch Vise, 2x2 inch face	$2 00		
Coach or Wood-Workers' Caps for 2¾ inch Vise, 3x3 inch face	3 00		
" " " " 3½ "		4x4½ "	4 00
" " " " 4½ "		5x5½ "	5 00

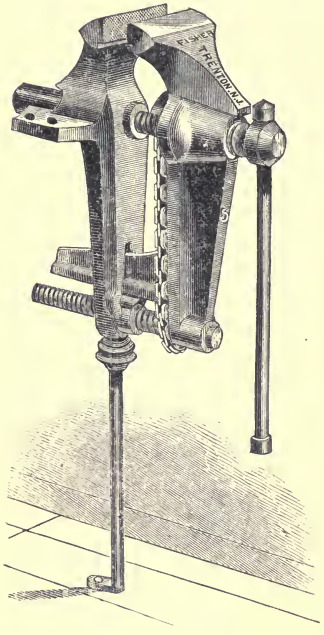
MILLER'S FALLS VISE.

UNION AND BACKUS VISE COMBINED—HEAVY OR CHIPPING VISE, COVERED SCREW.



Width of Jaw.	Without Iron Seat.	With Iron Seat.	Weight.
1½ inch.	$3 00	Extra $0 50	3½ lbs.
1¾ "	3 50	" 0 50	5 "
2 "	4 00	" 0 50	9 "
2½ "	5 50	" 0 75	22 "
3 "	7 00	" 1 00	39 "
3½ "	9 00	" 1 00	47 "
4 "	10 00	" 1 25	56 "
4½ "	12 50	" 1 50	67 "
5 "	17 00	" 1 75	75 "
6 "	25 00	" 2 00	116 "
7 "	30 00	No seat.	169 "

All Vises, except the 7 inch, sent with seats, unless otherwise ordered.



THE DOUBLE SCREW PARALLEL "LEG" VISE.

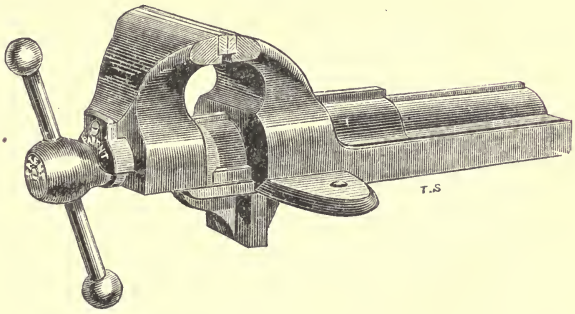
This Vise, the result of more than thirty years' experience, is stronger and better than any other, whether of foreign or American make; always parallel and holding with a tighter "grip." The jaws are of convenient shape for the workman to get near his work, equally well for filing or chipping.

PRICES.

No. 1.	Jaws 3 1–2 by	3–4 in.,	Screws	7–8 in. diam.,	Lever 9 in. long,	opens 4 1–4,	each,	$8 00
" 2.	" 4 1–2 by 1	in.,	"	1 1–8 in.	"	" 13 in.	"	" 5 1–4,	"	12 00
" 3.	" 5 1–4 by 1 1–8	in.,	"	1 1–4 in.	"	" 16 in.	"	" 6 1–2,	"	17 00
" 4.	" 6 1–4 by 1 1–4	in.,	"	1 1–2 in.	"	" 19 in.	"	" 7 1–2,	"	22 00
" 5.	" 7 by 1 1–2	in.,	"	1 3–4 in.	"	" 24 in.	"	" 9	"	30 00
" 6.	" 8 by 1 1–2	in.,	"	1 3–4 in.	"	" 26 in.	"	" 10	"	34 00

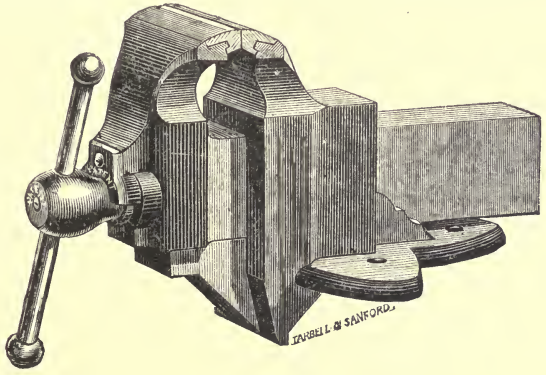
All sizes of these vises furnished with swivel attachment at an additional cost of $1 to $3.

PARKER'S VISES.



	Length of Jaw.	Weight.	Old No.	Price.
No. 30	2⅝ inches.	8½ lbs.	00	$2 50
" 31	3 "	13 "	0	3 00
" 32	3¼ "	19 "	1	4 25
" 33	3½ "	22 "	2	4 75
" 34	4 "	24 "	3	6 50
" 35	4½ "	35 "	4	9 50
" 36	5 "	59 "	5	12 00

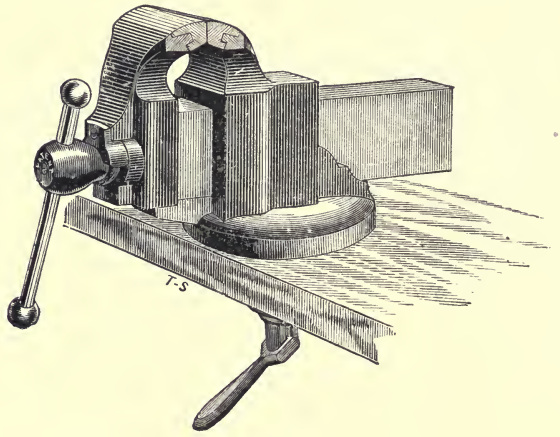
PARKER'S PATENT SQUARE SLIDE PARALLEL VISE.



Round Jaw.

	Length of Jaw.	Weight.	Price.
No. 000	3¼ inches.	23 lbs.	$6 25
" 1	3⅝ "	31½ "	7 00
" 2	4¼ "	41½ "	9 00
" 3	4¾ "	59½ "	11 75
" 4	5⅜ "	83 "	16 25
" 5	6⅛ "	120 "	24 00
" 6	8 "	200 "	

PARKER'S PATENT SQUARE SLIDE SWIVEL VISE.



Round Jaw.

	Length of Jaw.	Weight.	Old No.	Price.
No. 20	2¼ inches.	8½ lbs.	0	$5 00
" 21	3⅛ "	23 "	00	7 00
" 22	3⅝ "	35 "	1	8 75
" 23	4¼ "	48 "	2	11 00
" 24	4¾ "	63½ "	3	14 50

GERMAN BENCH VISES.

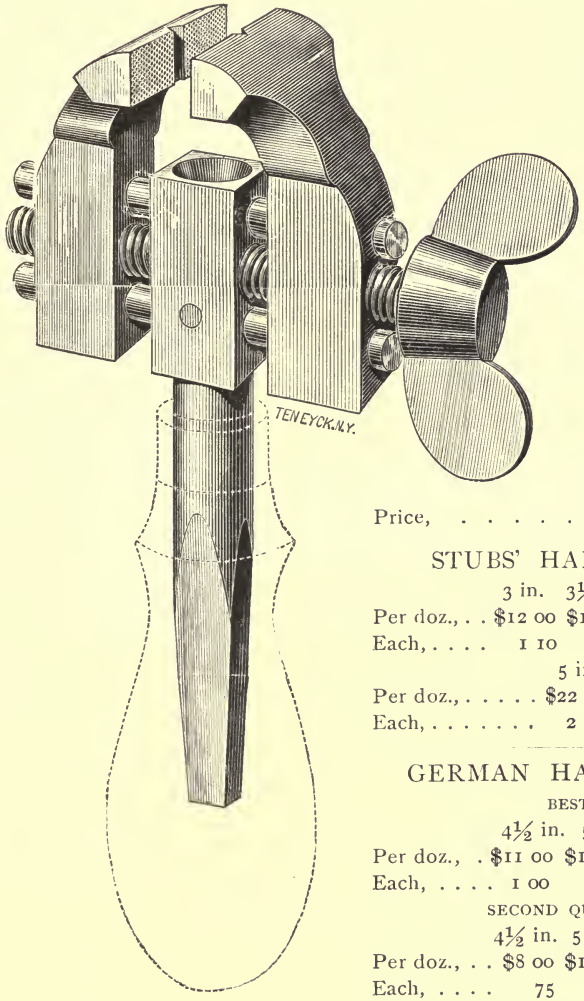
Common, each,	$2 00
Second quality, with Anvil,	3 00
Second quality, with Beck Iron,	3 50
Best (4 lbs. and under), each,	4 00
Best (over 4 lbs.), per lb.,	4 00
PARALLEL SWIVEL VISE, each,	$9 00
STUBS' BENCH VISES, each,	$4 25 to 7 00

TABLE VISES.

	Small.	Larger.
French: Each,	$2 00	$2 50

	Plain.	With Beck Iron.
German: Each	$3 00	$3 50

STEPHENS' PATENT HAND VISE.



This Vise will centre and hold firmly any tool placed in it, and may be used in the hand, on a bench, lathe, or bit-stock. The jaws, screw, and cross-bar are made of tempered steel. The handle, shown by the dotted lines, is made of hard maple, and may easily be removed, when the Vise is to be used in a lathe or bit-stock.

Price, ... $2 each

STUBS' HAND VISE.

	3 in.	3½ in.	4 in.	4½ in.
Per doz., . .	$12 00	$13 25	$14 25	$16 50
Each, ...	1 10	1 25	1 35	1 50

	5 in.	5½ in.	6 in.
Per doz., ...	$22 00	$26 50	$37 50
Each, ...	2 00	2 50	3 25

GERMAN HAND VISES.

BEST.

	4½ in.	5 in.	5½ in.	6 in.
Per doz., .	$11 00	$12 00	$14 50	$18 00
Each, ...	1 00	1 15	1 30	1 60

SECOND QUALITY.

	4½ in.	5 in.	5½ in.	6 in.
Per doz., . .	$8 00	$10 00	$12 00	$13 50
Each, ...	75	1 00	1 15	1 25

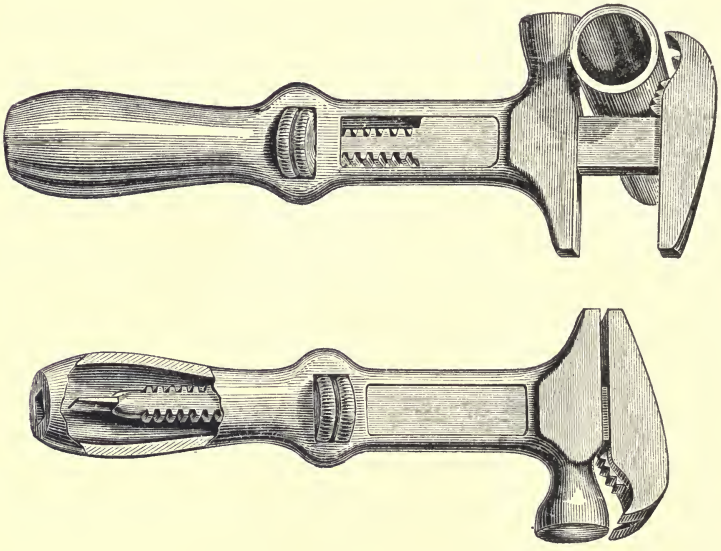
HANDLED HAND VISES, to 4½ inches, per dozen, $11 ; each, $1.

POLISHED SWISS HAND VISES.

	3¼ in.	3½ in.	3¾ in.	4 in.	4¼ in.	4½ in.
Per dozen, . . .	$11 00	$12 00	$12 00	$13 50	$15 00	$16 50
Each, ...	1 00	1 10	1 15	1 25	1 40	1 50

WRENCHES.

BOARDMAN'S PATENT COMBINATION WRENCH.



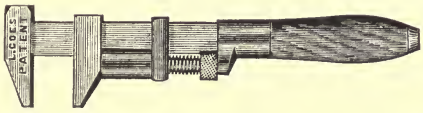
This Combination comprises "Six Useful Tools," neatly and compactly arranged in a convenient form for practical use. These tools are—screw wrench, pipe wrench, hammer, nail-claw, screw-driver, bit-handle, or socket wrench.

6 inch. bright, each, ...	$1 00
6 " nickel-plated, each, ...	1 25

BARWICK'S IMPROVED WRENCH PIPE TONGS.

No. 0, nickel-plated, takes from No. 7 wire to ½-inch pipe,						. .	$2 25
" 1, finished and polished, takes from gas-burner to ¾-inch pipe,						.	3 00
" 2, ground and finished	"	⅛ inch to 1¼	"				4 00
" 3, " "	"	1 "	2	"			5 00
" 4, " "	"	1½ "	3	"			9 00
" 5, " "	"	2½ "	4	"			12 00

COE'S WRENCHES.



	6 in.	8 in.	10 in.	12 in.	15 in.	18 in.	21 in.
Per doz.,	$7 20	$8 00	$9 60	$11 20	$19 20	$24 00	$27 80
Each,	75 cts.	85 cts.	1 00	1 25	2 00	2 50	3 00

BAXTER'S WRENCHES.

(Old and new styles.)

	4½ in.	6 in.	8 in.	10 in.	12 in.
Per doz.,	$6 00	$9 00	$12 00	$18 00	$24 00
Each,	60 cts.	80 cts.	1 10	1 75	2 25

THE DAVIS PATENT DUPLEX WRENCH.

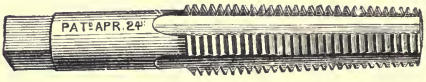
Combining the qualities of a Nut Wrench of equal size with that of six pair of pipe tongs.

8 in., each, $1 25. 12 in., $2 50. 15 in., $3 50.

PATENT ADJUSTABLE TAP WRENCH.

No. O, fitting taps from $\frac{7}{64}$ to $\frac{1}{4}$ inch, ... $2 25
No. A, " " $\frac{1}{4}$ " $\frac{5}{8}$ " 3 00
No. B, " " $\frac{1}{2}$ " 1 " 4 00
No. C, " " $\frac{7}{8}$ " $1\frac{1}{4}$ " 5 00

MACHINISTS' HAND TAPS.



Taper.

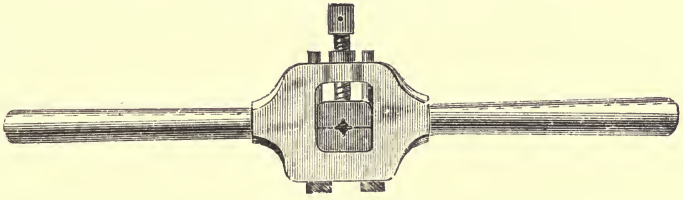
Plug.

Bottoming.

	Diameter.	No. of Threads to Inch.	Price each.	Price per Set.
3 Taps to Set	$\frac{1}{4}$	16, 18, and 20	$0 50	$1 50
3 " "	$\frac{5}{16}$	16 and 18	55	1 65
3 " "	$\frac{3}{8}$	14, 16, and 18	60	1 80
3 " "	$\frac{7}{16}$	14 and 16	70	2 10
3 " "	$\frac{1}{2}$	12, 13, and 14	80	2 40
3 " "	$\frac{9}{16}$	12 and 14	90	2 70
3 " "	$\frac{5}{8}$	10, 11, and 12	1 00	3 00
3 " "	$\frac{11}{16}$	11 and 12	1 20	3 60
3 " "	$\frac{3}{4}$	10 and 12	1 40	4 20
3 " "	$\frac{13}{16}$	10	1 60	4 80
3 " "	$\frac{7}{8}$	9 and 10	1 80	5 40
3 " "	$\frac{15}{16}$	9	2 00	6 00
3 " "	1	8	2 25	6 75
3 " "	$1\frac{1}{8}$	7 and 8	2 50	7 50
3 " "	$1\frac{1}{4}$	7	3 00	9 00
3 " "	$1\frac{3}{8}$	6	3 50	10 50
3 " "	$1\frac{1}{2}$	6	4 00	12 00
3 " "	$1\frac{5}{8}$	5	4 75	14 25
3 " "	$1\frac{3}{4}$	5	5 50	16 50
3 " "	$1\frac{7}{8}$	$4\frac{1}{2}$	6 50	19 50
3 " "	2	$4\frac{1}{2}$	7 50	22 50

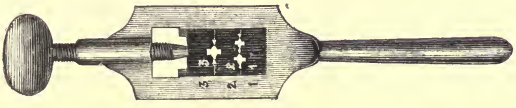
The above are made a 32d over size for rough iron.

NEW YORK TAP AND DIE CO.'S SCREW STOCKS AND DIES.



No. O,	cuts $\frac{1}{8}$ in. to $\frac{1}{4}$ in. by 32ds, and taps,	$5 25
" A,	" $\frac{1}{4}$, $\frac{3}{8}$, and $\frac{1}{2}$ in., no taps,	5 00
" B,	" $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ in., no taps,	8 00
" C,	" $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and $\frac{7}{8}$ in., "	10 00
" D,	" $\frac{7}{8}$, 1, $1\frac{1}{8}$, and $1\frac{1}{4}$ in., "	13 00

AMERICAN SCREW STOCKS.



With 3 and 4 sets of dies and taps. Made in a superior manner.

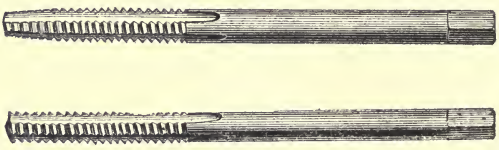
	Large.	Small and Medium.	Machine Screw sizes.	Left Hand.	Gunsmiths'.
Each,	$4 00	$2 50	$3 00	$3 00	$3 00

SCREW PLATES.

Stubs' polished, watch, and between watch and clock sizes:

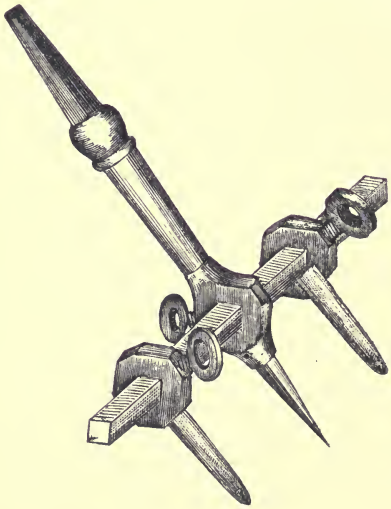
	5	6	7	8	10	12	14 sizes.
Plain,	$1 00	$1 20	$1 50	$1 80	$2 40	$3 00	
Each,							
Notched, each,	1 65	2 10	2 60	3 00	4 00	4 75	
Black, Clock, plain,		1 20	1 50	1 80	2 40	3 25	$4 50
" " notched,		1 80	2 30	2 60	3 40	4 50	5 30

TAPS FOR MACHINE SCREWS.



Diameter.	Wire Gauge No.	No. Threads to Inch.	Price.
7/64	No. 4	36 and 40	40 cts.
9/64	" 6	30, 32, 36, and 40	40 "
1/8	....	30, 32, and 36	40 "
5/32	" 8	30 and 32	40 "
3/16	" 10	20, 22, and 24	40 "
7/32	" 12	20, 22, and 24	40 "
1/4	" 14	18, 20, and 22	50 "
17/64	" 16	16, 18, 20, and 22	50 "
9/32	" 18	16, 18, and 20	50 "
5/16	" 20	16, 18, and 20	55 "
3/8	" 24	14, 16, and 18	60 "

All other sizes and threads of taps made to order, and many of them kept in stock.



SWISS SCREW STOCKS AND DIES WITH TAPS.

	3 in.	4 in.	5 in.
Each,	$4 00	$4 50	$5 50

SCREW CHASERS, per pair, 70 cts.

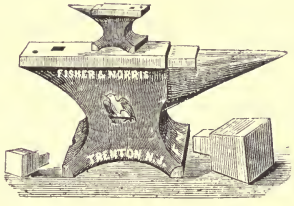
DOUBLE WASHER-CUTTER.

Assorted patterns.

Per doz., $15 ; each, $1 50.

ANVILS.

THE EAGLE ANVIL.



Anvils weighing 100 lbs. to 800 lbs., 11 cents per lb.

SMALLER ANVILS ("MINIMS").

No., . . .	0	1	2	3	4
Weighing about, .	10 lbs.	15 lbs.	20 lbs.	30 lbs.	40 lbs.
Each, . . .	$3 50	$4 25	$5 00	$5 50	$6 50
No., . . .	5	6	7	8	9
Weighing about, .	50 lbs.	60 lbs.	70 lbs.	80 lbs.	90 lbs.
Each, . . .	$7 50	$8 00	$9 00	$10 00	$10 50

The working surface of these anvils is of one piece of Jessop's best tool cast-steel, accurately ground, hardened, and tempered for the heaviest work. The horn is covered with, and its extremity made entirely of, steel. The body of the anvil is made of the strongest grade of American iron, to which the cast-steel face is warranted to be thoroughly welded, and not to come off.

SQUARE ANVILS.

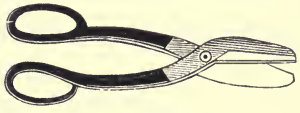
Square anvils, flat, to lay on the bench, 75 cents per inch.

SHEARS.

BENCH SHEARS.

No.	00	Bench, cut 12 inches, each,		$13 50
"	0	" " 10½ " "		12 00
"	1	" " 9 " "		8 00
"	2	" " 8⅝ " "		7 00
"	3	" " 8⅜ " "		6 00
"	4	" " 8 " "		5 00
"	5	" " 7 " "		4 00
"	6	" " 6 " "		3 50

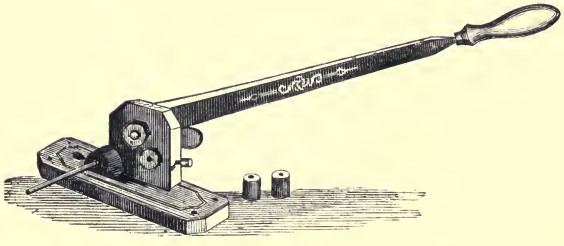
TINNERS' HAND SHEARS OR SNIPS.



No. 9 Hand Shears.

No.	6½,	Hand, cut 4½ inches, each,		$3 25
"	7,	" " 4 " "		2 75
"	8,	" " 3½ " "		2 25
"	9,	" " 3 " "		1 75
"	10,	" " 2½ " "		1 75
"	10,	Circular Hand, each,		2 50
"	0,	" " "		2 75
"	8,	" " "		3 25
"	7,	" " "		3 75
Elbow, Bench, each				5 25

LEVER BENCH WIRE-CUTTER.



Has an adjustable gauge, and cuts wire to ⅛ inch diameter.

Price, ... $5

TWIST DRILL GRINDING-MACHINE.

No. 1. For grinding drills below ½ inch, price, . . . $
" 2. " " from ⅜ inch to 2 inches, price, .

By removing the rest, the Machine may be used for an Emery Grinder.

CIRCULAR SAWS.

These Saws are made from the very best English material, in the most careful manner, by experienced workmen.

In ordering, please state the diameter of the saws in inches; thickness or gauge of saws at rim and at centre; whether right or left hand saw (see cut); number of teeth in saw; size of mandrel and pin-holes; distance between pin-holes from centre to centre; kind of lumber to be sawed. All stock saws above 40 inches in diameter have a two inch mandrel-hole and five-eighths lug pin-holes, three inches from centre to centre.

In all orders "Stubs' Iron Wire Gauge" will be considered the standard gauge, unless some other is specially mentioned.

STUBS' STANDARD IRON WIRE GAUGE, REDUCED TO DIVISIONS OF AN INCH.

Gauge Nos.		Gauge Nos.	
4	1/4 in. scant.	11	1/8 in. scant.
5	7/32 "	12	3/32 " full.
6	3/16 " full.	13	3/32 "
7	3/16 " scant.	14	3/32 " scant.
8	5/32 "	16	1/16 " full.
9	5/32 " scant.	22	1/32 " full.
10	1/8 " full.		

EXTRA CAST-STEEL CIRCULAR SAWS,

PATENT MACHINE-GROUND AND WARRANTED.

Diameter.	Thickness.	Price each.	Each additional Gauge thicker or thinner, Extra.
4 inches.	19 gauge.	$0 85	$0 06
5 "	19 "	1 00	0 07
6 "	18 "	1 25	0 09
7 "	18 "	1 50	0 10
8 "	18 "	1 75	0 11
9 "	17 "	2 25	0 14
10 "	16 "	2 75	0 16
12 "	15 "	3 50	0 20
14 "	14 "	4 00	0 24
16 "	14 "	4 75	0 28
18 "	13 "	5 50	0 34
20 "	13 "	7 00	0 40
22 "	12 "	8 00	0 48
24 "	11 "	10 00	0 55
26 "	11 "	12 00	0 65
28 "	10 "	14 00	0 80
30 "	10 "	16 00	0 90
32 "	10 "	18 50	1 00
34 "	9 "	21 00	1 20
36 inches.	9 gauge.	$24 00	$1 40
38 "	8 "	28 00	1 75
40 "	8 "	33 00	2 00
42 "	8 "	40 00	2 50
44 "	7 "	48 00	3 00
46 "	6 "	56 00	3 50
48 "	6 "	65 00	4 25
50 "	6 "	75 00	5 00
52 "	5 "	90 00	5 75
54 "	5 "	105 00	7 00
56 "	5 "	125 00	8 75
58 "	5 "	150 00	10 00
60 "	5 "	175 00	12 00
62 "	4 "	200 00	14 00
64 "	4 "	230 00	16 00
66 "	4 "	265 00	18 00
68 "	4 "	300 00	20 00
70 "	3 "	340 00	22 00
72 "	3 "	380 00	24 00

CIRCULAR SAWS FOR IRON, BRASS, AND TYPE-METAL.

(From No. 16 to 20 Gauge ; thicker or thinner, extra price.)

	1	2	3	4	5	6	7	8	9	10	11	12 in.
Each,	$1 00	1 10	1 20	1 30	1 50	1 75	2 00	2 50	3 25	4 25	5 25	6 25

CIRCULAR SAWS FOR CUTTING STEEL (LOCK-WORK).

From 2 inches to 4 inches diameter, from No. 10 to 20 gauge (extra temper and ground hollowing), each, $1 50.

JEWELLERS' CIRCULAR SAWS (TO 30 GAUGE).

	1 in.	1½ in.	2 in.	2½ in.	3 in.	3½ in.	4 in.
Each, . .	$1 40	$1 50	$1 60	$1 75	$2 00	$2 25	$2 75

COMB-MAKERS' CIRCULAR SAWS (FRENCH PATTERN).

	3 in.	3½ in.	4 in.	4½ in.
Each, . .	$3 00	$3 50	$4 00	$4 50

CIRCULAR "FRAZERS" or Grooving Saws (for piano-forte manufacturers and others), made to order any required thickness.

CIRCULAR SAWS for cutting ivory, bone, and slate.

CIRCULAR KNIVES for cutting cork, rubber, and paper made to order.

CIRCULAR SAWS for cutting sugar made to any size or thickness, and price furnished on application.

CONCAVE CIRCULAR SAWS, extra price, according to depth of concave and thickness of Saw.

ARBORS for Circular Saws from $1 50 to $3.

STUBS' HACK SAW BLADES.

	4	5	6	7	8	9	10	11	12	14 in.
Per dozen, .	$1 70	2 00	2 25	2 75	3 25	3 75	4 50	5 00	5 50	6 75
Each, . .	20	20	25	30	35	40	45	50	50	60

STUBS' HACK SAW FRAMES.

	3	4	5	6	7	8	9	10	11	12 in.
Each, . . .	$1 25	1 50	1 75	2 00	2 25	2 50	2 75	3 00	3 50	4 00

GERMAN HACK SAW FRAMES.

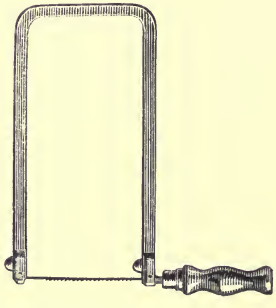
	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
Each . .	$1 25	$1 35	$1 50	$1 50	$1 75	$2 00

PIERCING SAW FRAMES.

		Small.	Larger.	
Stubs':	Each, . .	$2 25	$2 50	
Swiss:		6 in.	7 in.	8 in.
	Per dozen, . . .	$7 50	$10 50	$12 00
	Each, ...	75	1 00	1 25

Swiss, Brass, small, each, 75 cents.

DEEP SAW FRAMES.



Superior quality, German:

	6 in.	8 in.	10 in.	12 in.	14 in.	16 in.
Each, . . .	$1 50	$1 75	$2 00	$2 25	$2 50	$2 75.

Good quality, American:

	8 in.	10 in.	12 in.	14 in.
Each, ...	$1 10	$1 20	$1 30	$1 40

HAMMERS.

EMMET HAMMER CO.'S HAMMERS.

No. 9.

No. 21.

No. 22.

These Hammers are made of the celebrated Chrome steel, and are handled unless otherwise ordered.

HAND HAMMERS.

Wt. of H'ds,	8 oz.	12 oz.	1 lb.	1¼ lbs.	1½ lbs.	1¾ lbs.	2 lbs.	2½ lbs.	3 lbs.	3½ lbs.
Price each,	40c.	50c.	65c.	75c.	85c.	$1 00	$1 15	$1 35	$1 60	$1 80

MACHINISTS' STRAIGHT AND CROSS PENE HAMMERS.

(Nos. 9 and 21.)

Wt. of Heads,	4, 8, 12, and 14 oz.	1 lb.	1¼ lbs.	1½ lbs.	1¾ lbs.
Price each,	$1 00	$1 10	$1 20	$1 40	$1 50

Wt. of Heads,	2 lbs.	2¼ lbs.	2½ lbs.	3 lbs.	3½ lbs.	4 lbs.
Price each,	$1 70	$1 80	$2 00	$2 35	$2 70	$3 00

MACHINISTS' BALL PENE HAMMERS.

(No. 22.)

Same sizes and prices as Nos. 9 and 21.

DRILL HAMMERS.

Solid cast-steel, 6 to 25 lbs., per lb.,	.	.	40 cents.
" " over 25 " "	.	.	45 "
" " 2 to 5 " "	.	.	50 "
" " full polished, 6 cents per lb. extra.			

SMALL CAST-STEEL RIVETING HAMMERS, each 35 cents to 75 cents.

GERMAN CAST-STEEL DOUBLE-FACED PLANISHING HAMMERS, 1 lb. and under, $1 each; over 1 lb., $1 per lb.

PATENT ADJUSTABLE TOOL-HOLDER.

The above cut represents a Tool-Holder with a hollow handle, containing twenty cast-steel tools, hard maple handle, with lignum-vitæ cap.

The style of the chuck in these Tool-Holders has been changed recently, so that they are now the best in use.

Price, each,	.	.	$1
German Tool-Holders, with screw clamp, each,	.	.	$1 50
" " " spring " "	.	.	1 75

PLYERS.

STUBS' FLAT, ROUND, HALF-ROUND, AND CHAIN PLYERS.

	4½ in.	5 in.	5½ in.	6 in.	6½ in.	7 in.	8 in.
Per doz,	$6 00	$6 50	$7 25	$10 00	$13 50	$15 50	$22 00
Each,	60	65	75	1 00	1 25	1 40	2 00

GERMAN PLYERS.

	4½ in.	5 in.	5½ in.	6 in.	7 in.
Per doz,	$4 50	$5 15	$6 00	$7 00	$10 00
Each,	40	45	55	65	90

FRENCH PLYERS, STUBS' PATTERN, CAST-STEEL.

	4 in.	4½ in.	4¾ in.	5 in.	5½ in.	6 in.
Per doz.,	$4 50	$4 80	$5 50	$6 50	$8 50	$9 00
Each,	40	45	50	60	75	85

FRENCH PLYERS, CAST-STEEL, POLISHED.

	4¼ in.	4½ in.	5 in.	5½ in.	6 in.
Per doz.,	$4 00	$4 30	$5 90	$7 50	$8 60
Each,	35	40	50	70	80

FRENCH PLYERS, COMMON.

	4½ in.	5 in.	5½ in.	6 in.
Per doz.,	$3 00	$4 25	$5 50	$6 65
Each,	30	40	50	60

STUBS' HOLLOW CHOP PLYERS.

	5 in.	5½ in.	6 in.
Per doz.,	$10 00	$12 30	$14 50
Each,	90	1 10	1 30

UMBRELLA PLYERS.

	5 in.	5½ in.	6 in.
Per doz.,	$6 65	$7 20	$8 80
Each,	60	65	75

GAS-PIPE PLYERS (FRENCH).

	6 in.	8½ in.	10 in.	10⅜ in.	12⅜ in.	14 in.
Each,	$1 00	$1 35	$1 75	$2 00	$2 50	$3 00

STUBS' SIDE-CUTTING OR BELL-HANGERS' PLYERS.

	5¾ in.	6 in.	6½ in.	7 in.	8 in.
Per dozen,	$11 00	$12 00	$15 75	$20 00	$26 50
Each,	1 00	1 10	1 40	1 75	2 35

FRENCH SIDE-CUTTING PLYERS, 4½ inches, per dozen, $10 50; each, $1.

NIPPERS AND PINCERS.

STRAIGHT AND SIDE-CUTTING NIPPERS.

Stubs':	5 in.	5½ in.	6 in.	6½ in.	7 in.	8 in.
Per dozen,	$11 50	$12 50	$15 50	$18 50	$21 00	$27 50
Each,	1 00	1 25	1 40	1 65	2 00	2 50

German:	5 in.	5½ in.	6 in.	7 in.
Per dozen,	$9 70	$11 50	$12 75	$17 00
Each,	85	1 00	1 15	1 50

French, Stubs' Pattern:	4 in.	4½ in.	5 in.
Per dozen,	$8 50	$9 50	$11 50
Each,	75	90	1 10

French, polished, with screw joint:

	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.
Per dozen,	$6 75	$7 20	$8 20	$10 00	$13 00	$16 00
Each,	60	65	75	90	1 25	1 50

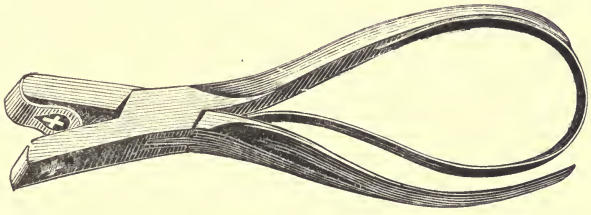
EUREKA PATENT NIPPERS.

	Per dozen.	Each.
4 inches, cuts wire ⅛ inch thick,	$8 00	75
5 " " 5/32 "	9 00	87
6 " " 3/16 "	11 00	1 00

STUBS' CUTTING PINCERS.

	5 in.	5½ in.	6 in.	7 in.	8 in.	9 in.	10 in.
Per dozen,	$8 25	$9 25	$10 00	$11 50	$13 25	$17 25	$19 50
Each,	75	80	90	1 10	1 25	1 60	1 75

CONDUCTORS' PUNCHES.

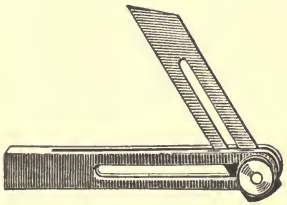


FANCY HOLES.		ROUND HOLES.	
Per doz.,	$16 50	Per doz.,	$15 00
Each,	1 75	Each,	1 50

STEEL BEVELS.

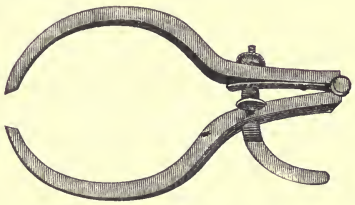
Each, ... $1 50

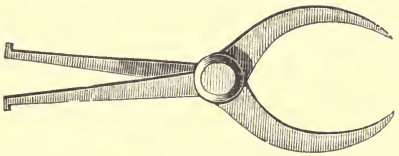
CALIPERS.



FINE CAST-STEEL WING CALIPERS.

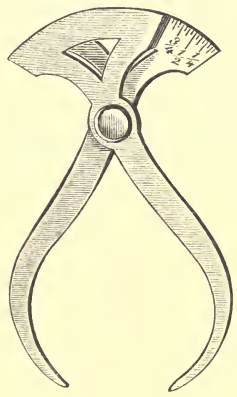
	5 in.	6 in.	8 in.	10 in.	12 in.	15 in.	18 in.
Per doz.,	$7 00	7 50	10 00	12 00	15 00	25·00	37 00
Each,	65	75	90	1 15	1 35	2 30	3 50





FINE CAST-STEEL DOUBLE CALIPERS.

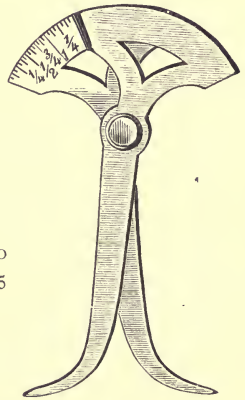
	2½ in.	4 in.	6 in.
Per doz.,	$5 00	$6 25	$7 75
Each,	45	65	75



SELF-REGISTERING CALIPERS,

INSIDE OR OUTSIDE.

	3 in.	6 in.
Per doz.,	$6 50	$12 00
Each,	65	1 15



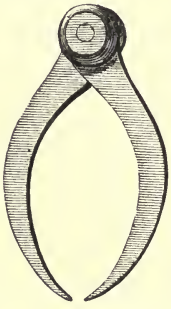
CAST-STEEL NAVY CALIPERS.

Size, 3½ inches.

Per dozen, ... $3 50
Each, ... 40

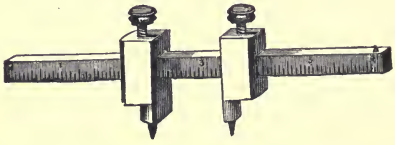
FINE CAST-STEEL INSIDE AND OUTSIDE CALIPERS.

	2½ in.	4 in.	6 in.	9 in.	12 in.	15 in.	18 in.	20 in.
Per dozen,	$4 50	6 00	7 25	10 00	13 50	22 50	31 50	40 00
Each,	45	60	75	1 00	1 25	2 10	3 00	3 75



STUBS' SPRING CALIPERS, polished:

	to 5 in.	6 in.
Per dozen,	$20 00	$23 00
Each,	1 75	2 25
Stubs' inside and outside Calipers, 4 inches, per dozen,	13 50	each 1 20
Stubs' double outside Calipers, per dozen,	11 00	each 1 00
GERMAN SPRING CALIPERS, polished, to 5 inches,	6 00	each 55
German double,	5 50	each 50



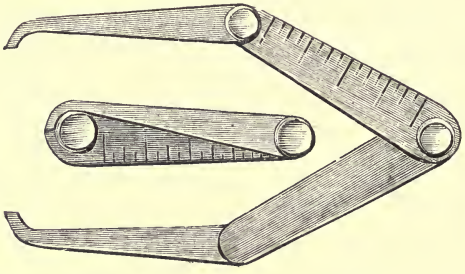
FINE STEEL CALIPER GAUGES.

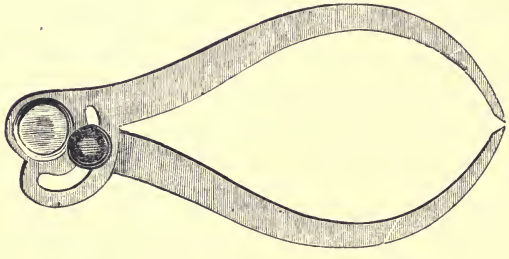
Per dozen, $41 50; each, $3 75.

FOLDING CALIPERS.

6-inch, with rule attached.

Per dozen, . . . $7 00
Each, ... 60





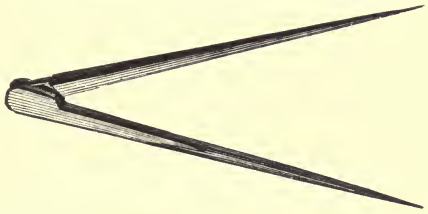
OUTSIDE AND INSIDE CALIPERS.

Cast-steel, with set screws.

6-inch, per dozen, . $7 50
Each, ... 75

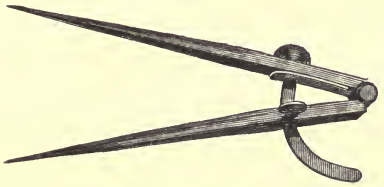
COMPASSES.

FINE CAST-STEEL COMPASSES.



	3 in.	3½ in.	4 in.	4½ in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
Per doz.,	$3 75	4 00	4 00	4 25	4 50	5 00	5 75	6 75	8 00	9 25	10 00
Each,	35	40	40	45	45	50	60	65	75	85	1 00

FINE CAST-STEEL WING COMPASSES.



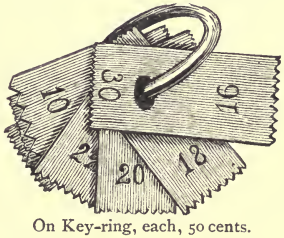
	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	11 in.	12 in.	15 in.	18 in.
Per doz.,	$6 25	6 75	8 00	9 25	11 25	12 35	13 75	15 00	25 00	37 00
Each,	60	65	75	85	1 00	1 15	1 25	1 40	2 30	3 50

DIVIDERS.

Stubs' Spring Dividers, polished, to 5 inches, per dozen, $16 50; each, $1 50
" " " " 6 " " " 20 00 " 1 75
German " " " 5 " " " 5 40 " 50
" " " with bone handle, 2 in.," " 5 90 " 55

GAUGES FOR MEASURING THE THREADS OF SCREWS.

Folding, each, $1.



On Key-ring, each, 50 cents.

Stubs' Iron Wire Gauges,			Nos. 1 to 26		6 to 36	1 to 36
Each,			$3 00		$4 00	$4 00
Stubs' Steel Wire or Drill Gauges,	A to Z	1 to 60	1 to 65	1 to 70	1 to 75	1 to 80
Each,	$3 00	$3 00	$3 25	$3 60	$4 25	$5 00
Swiss Steel Wire or Drill Gauges,	$2 75	$1 75	$2 00	$2 00	$2 25	$2 25

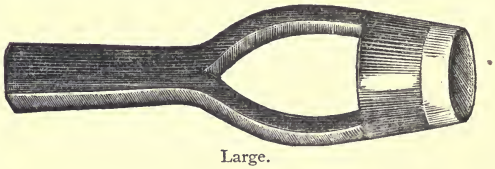
PLATE SAW SETS.

6 inch (steel), per dozen, $3 75 ; each, 40 cents.

ROUND CUTTING PUNCHES.

Small.

Nos.,	1 to 6	7 to 9	10 to 12	13 to 16
Per doz.,	$2 50	$2 75	$3 00	$4 50
Each,	25	30	30	40



Large.

SINGLE HANDLES.

	⅜ to ⅞ in.	1 to 1⅛ in.
Per dozen,	$9 50	$14 00
Each,	85	1 25

DOUBLE HANDLES.

	1⅛ to 1¼ in.	1⅜ to 1⅝ in.	1¾ to 2 in.	2⅛ to 3 in.
Per dozen,	$19 00	$22 50	$31 00	$40 00
Each,	1 75	2 00	2 75	3 50

COUNTERSINKS, each, ... 25 cents.

NURLS OR MILLING WHEELS.

Nos.,	1	2	3	4	5	6	7
Per dozen,	$1 75	$2 10	$2 75	$3 40	$4 75	$6 00	$7 25
Each,	25	25	30	35	45	60	65

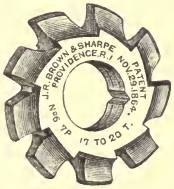
NURL HANDLES.

Nurl Handles, plain, Swiss, each, ... 35 cents.
" " universal, Swiss or French, each, . . 75 "
" " plain, French, each, ... 25 "

WROUGHT-IRON LADLES.

Diameter,	2½ in.	3 in.	3½ in.	4 in.	5 in.	6 in.
Price each,	30 cts.	35 cts.	40 cts.	50 cts.	60 cts.	75 cts.

BROWN & SHARPE MANUFACTURING CO.'S TOOLS.



CUTTERS

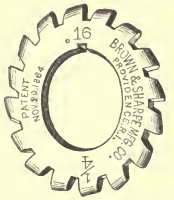
For the teeth of gear-wheels, which can be sharpened by grinding without changing their form.

Diametral pitch, 2 to 32; diameter of cutter, 1¾ to 5 in.; hole in cutter, ⅞ to 1¼ in.; price, each, $3 80 to $24.

CUTTERS FOR GROOVING TAPS.

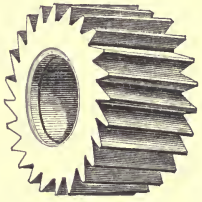
Diameter of cutter, 1¾ to 2⅝ in.; price, each, $5 to $8.

CUTTERS FOR MAKING TWIST DRILLS.



Diameter of cutter, 1¾ to 2¾ in.; price, each, $3 90 to $6 50.

GROOVING AND SPIRAL MILLING CUTTERS.

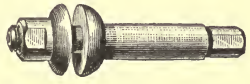


Diameter of cutter, 2¼ to 2½ in.; price, each, $3 to $9.

CUTTERS FOR MILLING IRREGULAR FORMS,

Which can be sharpened by grinding without changing their shape, made to order.

Parties having occasion to use mills for irregular shapes on sewing-machine or other work will see the advantage of these cutters. A less number of cutters can be used in making a gang of mills, and they can be sharpened by grinding, at a trifling cost, without being removed from the arbor.



EMERY-WHEEL for grinding cutters, ... $1 50
ARBOR for same, . . . 3 50

STANDARD STEEL RULES.

1 in.	2 in.	3 in.	4 in.	6 in.	9 in.	12 in.	18 in.	24 in.	36 in.	48 in.
25c.	40c.	50c.	75c.	$1 00	$1 50	$2 00	$3 00	$4 00	$8 00	$12 00

GEAR RULES.

12-in. Steel Rule, divided to 18 to 32 of inch, $3.

Ditto, divided to 6 to 38, $3.

SHRINK RULES.

24¼-in. Steel Shrink Rule, $4 50.

24¼-in. Boxwood Shrink Rule, $3.

STANDARD STEEL YARD MEASURE.

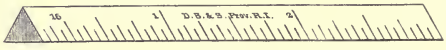
Divided to inches, eighths, etc., $3.

STANDARD STEEL RULES, FRENCH MEASURE.

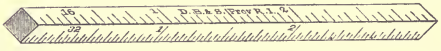
1/20	1/10	1/5	3/10	1/2	1 Metre
45c.	85c.	$1 75	2 50	4 00	10 00

TRIANGULAR STEEL RULES.

3 in.	4 in.	6 in.	12 in.
60 cts.	80 cts.	$1 20	$3 00



SQUARE STEEL RULES.



3 in.	4 in.	6 in.
50 cts.	75 cts.	$1 00

STANDARD STEEL STRAIGHT-EDGES.

6 in. long,	1	in. wide,	$\frac{1}{10}$	in. thick, ...	$0 75
9 "	$1\frac{1}{8}$	"	$\frac{1}{10}$	"	1 12
12 "	$1\frac{1}{4}$	"	$\frac{1}{10}$	"	1 50
18 "	$1\frac{1}{2}$	"	$\frac{1}{8}$	"	2 25
24 "	2	"	$\frac{1}{8}$	"	3 00
36 "	$2\frac{3}{8}$	"	$\frac{1}{8}$	"	6 00
48 "	3	"	$\frac{1}{8}$	"	9 00

BEVELLED STEEL STRAIGHT-EDGES.

12 to 48 inches; price each, $2 50 to $12.

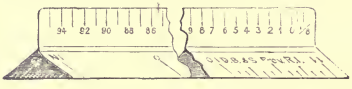
HARDENED STEEL STRAIGHT-EDGES.

$5\frac{1}{2}$ to 39 inches; price each, $1 to $12.

DRAUGHTSMEN'S STEEL STRAIGHT-EDGES.

15 to 60 inches; price each, $1 14 to $9 90.

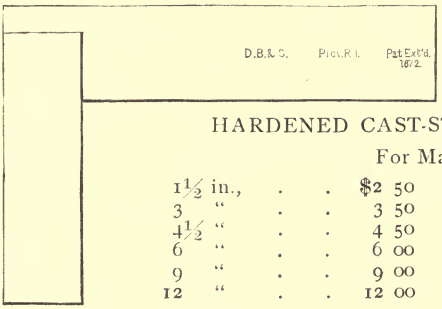
SILVER-PLATED TRIANGULAR SCALES.



12-inch Triangular Drawing Scale, for Architects, Mechanical Draughtsmen, and Engineers. Price, $6.

TRIANGULAR BOXWOOD SCALES.

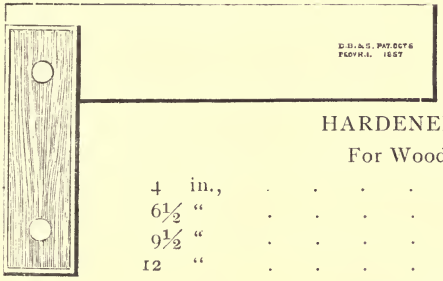
For Railroad Engineers and Land Surveyors (also Architects and Draughtsmen). 6 to 24 inches; price each, $1 50 to $5.



HARDENED CAST-STEEL TRY SQUARES

For Machinists.

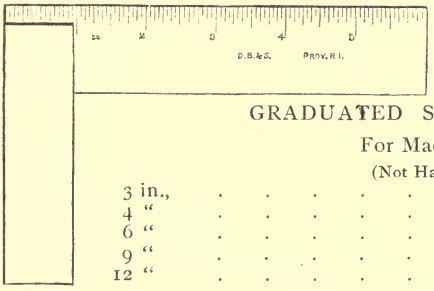
1½ in.,	$2 50	15 in.	$15 00
3 "	3 50	18 "	20 00
4½ "	4 50	24 "	30 00
6 "	6 00	30 "	40 00
9 "	9 00	36 "	50 00
12 "	12 00		



HARDENED SQUARES

For Wood Workmen.

4 in.,	$2 00
6½ "	3 00
9½ "	4 00
12 "	6 00

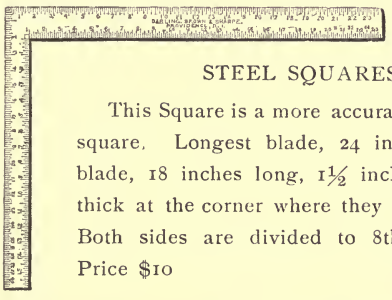


GRADUATED STEEL SQUARES

For Machinists.

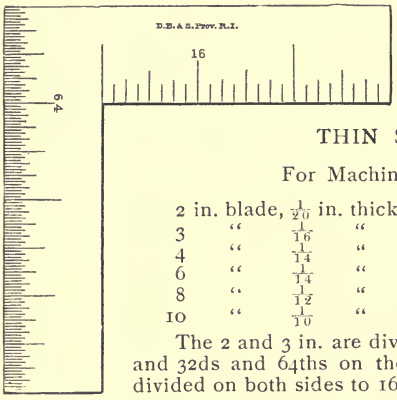
(Not Hardened.)

3 in.,	$2 50
4 "	3 00
6 "	3 50
9 "	4 00
12 "	6 00



STEEL SQUARES FOR MILLWRIGHTS.

This Square is a more accurate tool than the ordinary carpenter's square. Longest blade, 24 inches long, 2 inches wide; shortest blade, 18 inches long, 1½ inches wide. Both blades are $\frac{3}{16}$ inch thick at the corner where they unite, and taper down to $\frac{1}{16}$ at ends. Both sides are divided to 8ths, 16ths, 32ds, and 64ths of inch. Price $10



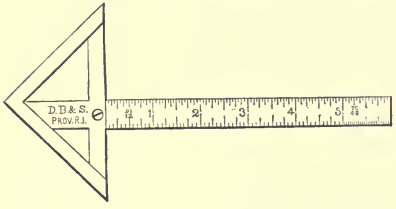
THIN STEEL SQUARES

For Machinists and Draughtsmen.

2 in. blade,	$\frac{1}{20}$	in. thick,	$1 50
3 "	$\frac{1}{16}$	"	2 00
4 "	$\frac{1}{14}$	"	2 50
6 "	$\frac{1}{14}$	"	3 50
8 "	$\frac{1}{12}$	"	4 50
10 "	$\frac{1}{10}$	"	5 50

The 2 and 3 in. are divided to 16ths and 64ths on one side, and 32ds and 64ths on the other. The 4, 6, 8, and 10 in. are divided on both sides to 16ths and 32ds of inch.

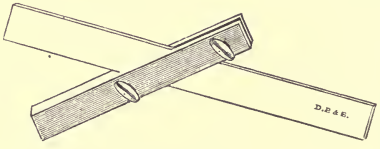
UNIVERSAL OR CENTRE SQUARES.

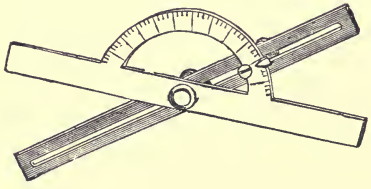


4 in.,	$3 00
6 "	3 00
8 "	4 00
10 "	5 00
12 "	6 00

T-SQUARE AND UNIVERSAL BEVEL.

Hardened Cast-Steel. Price, $6.



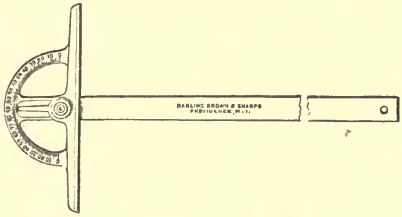


BEVEL PROTRACTOR

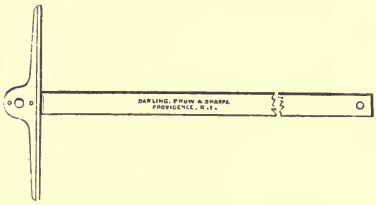
With sliding arm, and half circle divided to degrees.

Price, with 6-in sliding arm,	$6 50
" " 10 " "	7 00

DRAUGHTSMEN'S T-SQUARES.



Price, with 30-inch blade, $15; with 36-inch blade, $16.



Price, with 20-inch blade, $6.

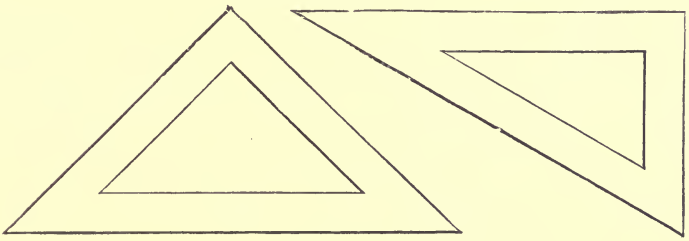
PLUMB BOBS.

Bronze, with screw cap and steel point,	$2 50
Bronze, without screw cap,	2 00
Iron, without screw cap,	75

Weight, about 8 ounces.

OPEN STEEL TRIANGLES

For Draughtsmen.



PRICE-LIST.

Angles, 45, 45, and 90 degrees. Large size, sides 8, 8, and 11¼ in., ¾ in. wide,	$4 50
Small size, sides 5, 5, and 7 1/16 in., ⅝ in. wide,	3 50
Angles, 30, 60, and 90 degrees. Large size, sides 6, 10⅜, and 12 in., ¾ in. wide,	4 50
Small size, sides 3½, 6 1/16, and 7 in., ⅝ in. wide,	3 50

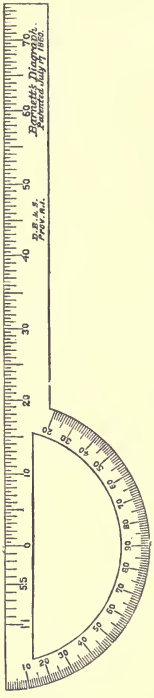
Thickness, 1/16 in.

WILLIS' ODONTOGRAPH

Is an instrument for describing the correct form for the teeth of wheels, and the templets and cutters used in making them. No. 1, with directions for use, $2 50; No. 2, $4; per pair, $6.

PAPER SCALES.

The advantages of these Scales are: they expand and contract nearly the same as drawing-paper, do not soil the work, and distances can be set off from them without the use of dividers. Price, 25 cents each; $1 per set of six.



THE DIAGRAPH.

The Diagraph is a new and valuable invention for drawing diagrams and platting surveys, by which the rapidity of platting is increased *fourfold.*

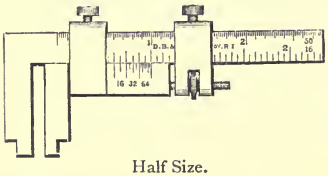
The diameter of the circle is 4 inches, and the whole length of the instrument, 9½ inches. It is made of German silver. Price, $2 50; in morocco case, $3 50.

PATENT GAS-HEATER,

For Tempering Drills, etc.

With this Gas-Heater a bar of steel ½ inch in diameter can be made red-hot in 6 minutes, and in 2 minutes a ¼ inch bar can be heated sufficiently to be hardened.

Price, $1.

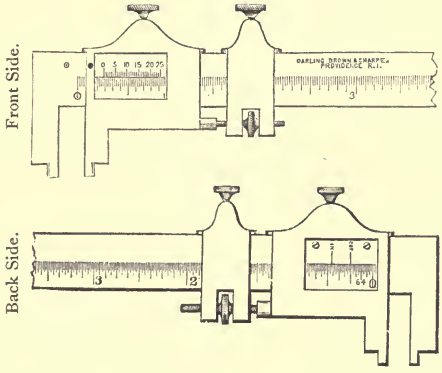


Half Size.

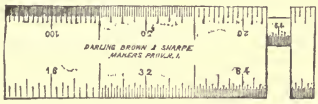
POCKET VERNIER CALIPER.

Hardened cast-steel. With adjusting screw, as shown in cut, price $6; in morocco case, $7; without adjusting screw, $5; in morocco case, $6.

IMPROVED VERNIER CALIPER.



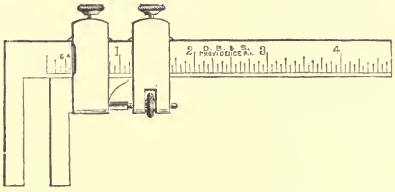
An explanation of the Vernier accompanies each instrument. The cuts are half size. Price, in morocco case, 6 in., $25 ; 12 in., $30.



STEEL CALIPER RULES.

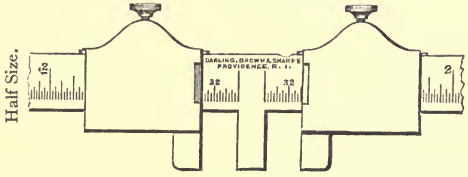
This cut is a fac-simile of one side of these Rules. Price, $4.

CALIPER SQUARES.



2 in. without adjusting screw,	$3 50
4 in. " " "	4 50
2 in. with adjusting screw like cut,	4 25
4 in. " " "	5 50

DOUBLE CALIPERS.

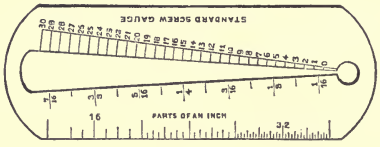


Whole length, 7½ in., and will caliper 3½x4½ in. Weighs but four ounces, and can be readily carried in the pocket. Price, $14. With heavier bar and wood handle, made for use in rolling or forging iron or steel, 12 in., and will caliper 3½x1½ in. Price, $24.

POCKET SCREW AND WIRE GUAGE.

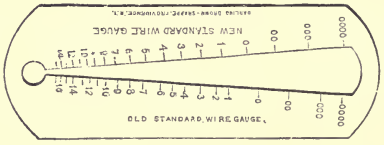
Price, $2 50.

Front Side.

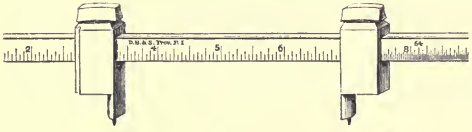


Cuts one half size.

Back Side.



COMBINED GAUGE AND CALIPER.



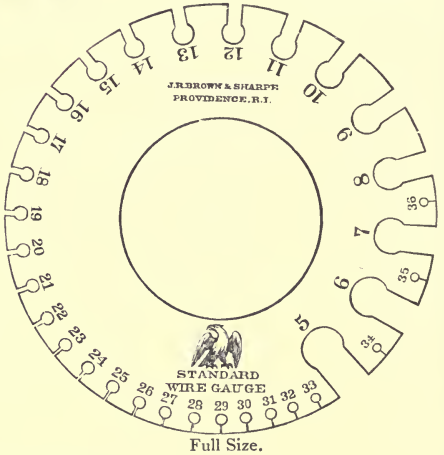
This tool combines Dividers, inside and outside Calipers, and a graduated double scratch gauge. It will caliper a round bar two inches in diameter. Price, $5.

THE AMERICAN STANDARD WIRE GAUGE.

Adopted by the Brass Manufacturers, January, 1858.

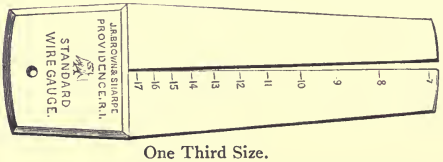
☞ None genuine unless stamped as in the engraving.

Round Gauges, sizes 0 to 36, $6
" " " 5 to 36, 4



Full Size.

ANGULAR WIRE GAUGES.

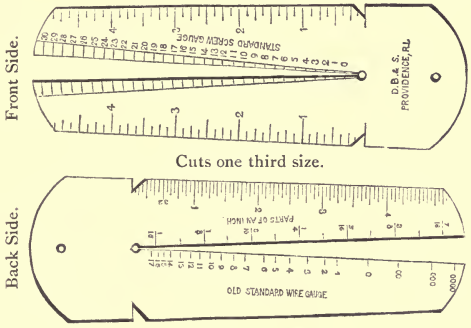


One Third Size.

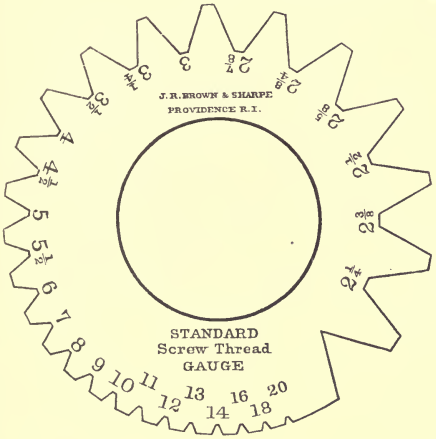
000 to 9, ...	$8 00
7 to 17, ...	8 00
15 to 28, ...	8 00
25 to 40, ...	8 00

LARGE SCREW AND WIRE GAUGE.

Price, $3.



Cuts one third size.



Full Size.

STANDARD SCREW THREAD GAUGE.

This Gauge is intended to be used as a standard for grinding tools to cut threads according to the new system recommended for adoption by the Franklin Institute of Philadelphia.

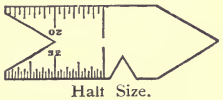
Price, $6.

CENTRE GAUGE,

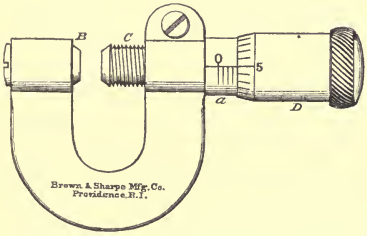
And Gauge for grinding and setting Screw Tools.

The angles used in this gauge are 60 degrees.

Price, 50 cents.



Half Size.



Full Size.

POCKET SHEET-METAL GAUGE.

For the use of Machinists, Jewellers, Silversmiths, Sheet-Brass Rollers and Workers, Sheet-Iron Rollers, Wire-Drawers, Rubber Manufacturers, Paper-Makers, Type-Founders, etc. Price, $6. In morocco case, $6 50.

For full description of Brown & Sharpe's tools send for descriptive Catalogue.

P.S. STUBS' FILES.

DESCRIPTION.	3	3½	4	4½	5	6	7	8	9	10	12 in.
HAND, KNIFE, AND PILLAR:											
Bastard, dozen	$1 80	$1 80	$1 90	$2 35	$2 50	$3 60	$4 40	$5 50	$6 60	$7 70	$10 00
Bastard, each	20	20	20	25	25	35	40	50	60	70	90
Smooth, dozen	2 10	2 10	2 50	3 10	3 30	4 40	5 50	6 60	7 70	8 80	12 00
Smooth, each	20	20	25	30	35	40	50	60	70	80	1 10
Superfine, dozen	3 05	3 05	3 60	4 15	4 40	5 50	6 60	8 25	10 00	11 00	15 00
Superfine, each	30	30	35	40	45	50	60	75	90	1 00	1 40
HALF ROUND:											
Bastard, dozen	1 90	2 20	2 75	3 05	3 30	4 40	5 00	5 50	6 60	8 25	11 00
Bastard, each	20	20	25	30	35	40	45	50	60	80	1 00
Smooth, dozen	2 20	2 60	3 05	3 45	3 85	5 00	6 05	6 60	8 25	9 90	13 20
Smooth, each	20	25	30	30	35	45	55	60	75	90	1 25
Superfine, dozen	3 05	3 30	3 85	4 40	5 00	6 05	7 70	8 80	11 00	12 10	16 50
Superfine, each	30	35	35	40	45	55	70	80	1 00	1 10	1 50
CROSSING:											
Bastard, dozen	2 50	2 75	3 10	3 30	3 60	5 00	6 05	6 60	7 70	8 80	
Bastard, each	25	25	30	30	35	45	55	60	70	80	
Smooth, dozen	2 75	3 10	3 30	3 85	4 40	5 50	7 15	7 70	9 35	11 00	
Smooth, each	25	30	30	35	40	50	65	70	85	1 00	
Superfine, dozen	3 30	3 85	4 40	5 00	5 50	6 60	8 80	10 00	12 10	13 20	
Superfine, each	30	35	40	45	50	60	80	90	1 10	1 20	
WARDING:											
Bastard, dozen	1 65	1 65	1 95	2 10	2 20	2 30	4 15				
Bastard, each	15	15	18	20	25	35	40				
Smooth, dozen	1 95	1 95	2 35	2 75	3 10	4 15	5 00				
Smooth, each	18	18	20	25	30	40	45				
EQUALLING:											
Bastard, dozen	1 95	1 95	2 20	2 50	2 75	3 30	3 85	5 00	6 05	7 70	10 00
Bastard, each	20	20	20	25	25	30	35	45	55	70	90
Smooth, dozen	2 20	2 20	2 50	3 05	3 30	4 40	5 00	6 60	7 70	8 80	12 00
Smooth, each	20	20	25	30	30	40	45	60	70	80	1 10
TAPER THREE-SQUARE:											
Bastard, dozen	1 50	1 65	1 95	2 10	2 50	3 05	3 85	5 60	6 60	7 70	
Bastard, each	15	15	20	20	25	30	35	50	60	70	
Smooth, dozen	1 95	2 20	2 50	2 75	3 30	3 85	5 00	6 60	7 70	8 80	
Smooth, each	20	20	25	25	35	35	45	60	70	80	
Superfine, dozen	2 20	2 60	3 05	3 60	4 15	5 25	6 60	7 70	10 00	11 00	
Superfine, each	20	25	30	35	40	50	60	70	90	1 00	
SQUARE AND TAPER FLAT:											
Bastard, dozen	1 65	1 80	1 95	2 35	2 50	3 60	4 40	5 00	6 05	7 70	
Bastard, each	15	15	20	25	25	35	40	45	55	70	
Smooth, dozen	1 95	2 20	2 50	3 05	3 30	4 40	5 50	6 05	7 15	8 80	
Smooth, each	20	25	25	30	35	40	50	55	65	80	
Superfine, dozen	2 75	3 05	3 60	4 25	4 40	5 50	6 60	7 70	8 80	10 00	
Superfine, each	25	30	35	40	40	50	60	70	80	90	
ROUND:											
Bastard, dozen	1 65	1 80	1 95	2 20	2 50	3 05	3 85	5 00	6 05	7 70	
Bastard, each	15	18	20	20	25	30	35	45	55	70	
Smooth, dozen	2 20	2 50	2 75	3 05	3 30	4 40	5 50	6 60	8 25	10 00	
Smooth, each	20	25	25	30	35	40	50	60	75	90	
Superfine, dozen	3 00	3 30	3 85	4 40	5 00	6 60	7 70	8 80	11 00	12 00	
Superfine, each	30	35	35	40	45	60	70	80	1 00	1 10	
SLITTING:											
Bastard, dozen	2 75	3 05	3 30	3 60	3 85	5 00	6 00	7 15	8 25		
Bastard, each	25	30	30	35	35	45	55	65	75		
Smooth, dozen	3 30	3 60	3 85	4 30	5 25	5 50					
Smooth, each	30	35	35	40	50	50					
TAPER SAW:											
Bastard, dozen	1 65	1 80	2 10	2 35	2 80	3 10					
Bastard, each	15	18	20	20	25	30					

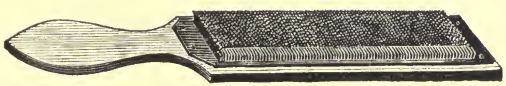
GROBET FILES.

DESCRIPTION.	2	2½	3	3½	4	4½	5	6	7	8	9	10 in.
HAND:												
No. 0 dozen			$1 75	$1 90	$2 25	$2 60	$2 85	$3 60	$4 55	$5 65	$6 95	$8 55
each			15	18	20	25	25	35	40	50	60	75
1 dozen			1 90	2 25	2 60	2 85	3 25	3 95	5 00			
each			18	20	25	25	30	35	45			
2 dozen			2 25	2 60	2 85	3 25	3 60	4 25	5 55	6 65	7 95	9 60
each			20	25	25	30	35	40	50	60	70	85
3 dozen			2 60	2 85	3 25	3 60	3 95	4 65	6 05	7 65	8 95	10 60
4 each			25	25	30	35	35	40	55	70	80	95
5 dozen			2 85	3 25	3 60	3 95	4 25	5 00	7 05			
each			25	30	35	35	40	45	65			
6 dozen			3 25	3 60	3 95	4 25	4 65	5 40	7 55	8 65	10 00	11 60
each			30	35	35	40	40	50	65	75	90	1 00
7 dozen			3 60	3 95	4 25	4 65	5 00	5 75				
each			35	35	40	40	45	50				
8 dozen			3 95	4 25	4 65	5 00	5 40	6 15	8 55			
each			35	40	40	45	50	55	75			
PILLAR:												
No. 0 dozen			1 50	1 65	2 00		2 60	3 25				
each			15	15	20		25	30				
1 dozen			1 50	1 65	2 00		2 85	3 65				
each			15	15	20		25	35				
2 dozen			1 50	1 65	2 00		3 25	3 95				
each			15	15	20		30	35				
3 dozen			1 65	1 75	2 25		3 65	4 25				
each			15	15	20		35	40				
4 dozen			1 65	1 75	2 25		3 65	4 25				
each			15	15	20		35	40				
5 dozen			1 65	1 75	2 25							
each			15	15	20							
6 dozen			1 75	2 00	2 55		4 25	5 00				
each			15	20	25		40	45				
7 dozen			1 75	2 00	2 55							
each			15	20	25							
8 dozen			1 75	2 00	2 55							
each			15	20	25							
HALF ROUND:												
All Nos. dozen	$1 75	$1 85	1 85	1 90	2 25	2 65	3 10	4 10				
each	15	20	20	20	20	25	30	35				
ROUND:												
All Nos. dozen	75	75	75	90	1 25	1 60	1 90	2 50				
each	10	10	10	10	15	15	20	25				
SQUARE:												
All Nos dozen	1 00	1 00	1 00	1 15	1 50	1 75	2 15					
each	10	10	10	15	15	20	20					
KNIFE, BARRETTE, AND CROSSING:												
Dozen	1 50	1 50	1 50	1 65	2 00	2 65	3 10	4 35				
Each	15	15	15	15	20	25	30	40				
THREE SQUARE:												
Dozen	1 90	2 15	2 30	2 55	2 70							
Each	20	20	25	25	25							

WATCHMAKERS' FILES.

	Per doz.	Each.
Pivot files,	$2 90	$0 30
Escapement files,	1 30	15
Screw-head "	1 30	15
Broach "	50	5
Needle "	$0 50 to 1 50	$0 06 to 0 15
Ruby "		50

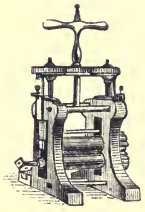
SHEFFIELD FILES, ALL SIZES, SHAPES, AND CUTS.



FILE CARDS.
Each, 15 to 30 cents.

JEWELLERS' TOOLS.

ROLLING MILLS.



Plain Rolls, per inch, $15.
Extra Roll, with half-round grooves, per inch, $8.
One " " " " and 1 plain, per in., $16.
Square wire Rolls, per inch, $20.
Iron Stands for Mills, each, $10 and $12.
Cogs for Rolls, per pair, $6 to $10.
Rolls over 4 inches, extra price. Power Mills, all sizes, made to order. Prices on application.

ANNEALING PLATES.

Diameter,	1½ in.	2 in.	2½ in.
Per pair,	75c.	$1 00	$1 50

BLOW-PIPES.

Brass:	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
Per dozen,	$1 10	$1 30	$1 40	$1 60	$1 80	$2 70
Each,	10	12	15	18	20	25

Brass, with ball:	8 in.	10 in.	12 in.
Per dozen,	$3 30	$3 60	$4 00
Each,	30	35	40

Brass, extra large, for case-makers.	8 in.	9 in.	10 in.
Per dozen,	$2 50	$2 85	$3 15
Each,	25	30	30

Iron:	6 in.	8 in.	10 in.
Per dozen,	$2 00	$2 75	$3 30
Each,	20	25	30

BROACHES.

STUBS':

No. 55 and smaller.	50	45	40	32	28	20	15	12
Per dozen,	75c.	85c.	90c.	$1 00	$1 15	$1 25	$1 55	$1 85	$2 15
Each,	8	8	10	10	15	15	20	20	20

	4 in.	4½ in.	5 in.	5½ in.	6 in.	7 in.	8 in.
Per dozen,	$2 50	$2 65	$3 65	$4 50	$5 00	$6 75	$9 00
Each,	25	30	35	40	45	65	1 00

BROACHES—CONTINUED.

SWISS JOINT BROACHES:

Nos.	1 to 6	46 to 50	51 to 56	57 to 60	61 to 70
Per gross,	$1 50	$2 75	$2 00	$1 90	$1 65
Per dozen,	20	20	20	20	20

CASE-MAKERS' SQUARE BROACHES:

First quality, all numbers, per gross, $2 25; per dozen, 25 cents.
Second " " " 1 35 " 20 "

BROACH LATHES.

	Small.	Large.
Each,	$3 00	$3 75

JOINT PIN LATHES, each, $3 50.

BRUSHES.

	Per gross.	Per dozen.
Pencil Brushes, for soldering,	$1 25 to $3	20c. to 30c.

Brush Wheels, Cotton and Felt Buffs, of every description on hand and made to order.

BRASS SCRATCH-WHEEL BRUSHES.

2 rows	Diameter of Brush,	2 in.	2½ in.	3 in.	4 in.
	Price, each,	$1 25	$1 50	$1 75	$2 60
3 rows	Price, each,	1 65	2 00	2 60	3 60

	Small.	Large.
Brass End Brushes, each,	75c.	$1

HAND BUFFS.

Leather:	Plain.	Heavy.	H'f-round.	Round.
Per dozen,	50c.	$1 00	80c.	$1 00
Each,	5c.	10	8c.	10

Felt:	Flat.	Round straight.	Round pointed.
Per dozen,	$2 00	$2 00	$2 75
Each,	20	20	30

BURNISHERS.

Swiss, Oval Steel :	2½ in.	3½ in.
Per dozen,	$2 30	$2 50
Each,	25	30

French, Oval Steel in Handles, straight and curved ends :
Per dozen, $3 40 ; each 40 cents.

French, Agate in Handles :
Per dozen, $9 75 ; each, $1 00.

Stubs' Steel in Handles :

	Small.	Medium.	Large.	Jewellers'.
Per dozen,	$2 80	$4 20	$5 60	$6 75
Each,	30	40	50	60

CASSEROLES, or Coloring Pots, 3 to 6½ in. diameter, each, 60 cents to $2.
EVAPORATING DISHES, each, 45 cents to $5.

CHASERS' BEADING PLATES.

Brass, with steel beads, each, $1 75.
Steel, hardened and graduated sizes, each, $3.

PIRSON'S CHASING TOOLS.

	Mats for gold.	Mats for silver.	Mats for bronze.
Set of 100,	$20 00	$10 50	$9 00
" 50,	10 50	5 50	4 50
Per dozen,	3 00	2 50	2 00
Each,	30	25	20

	Frisoirs and Egrenoirs.	Perloirs.	Perloirs (ex. large).
Per dozen	$5 00	$3 00	$2 40
Each,	50	30	25

	Grained Perloirs.	Grained Tracers.	Hair Tracers.
Per dozen,	$4 80	$4 00	$3 60
Each,	45	40	35

	Plain Tracers.	Flowers and Leaves.
Per dozen,	$2 50	$6 25
Each,	25	55

BOURGOIN'S CHASING TOOLS.

	Frisoirs and Egrenoirs.	Perloirs.
Per dozen,	$6 50	$3 60
Each,	60	35

VAUTIER'S FRISOIRS, per dozen, $6 ; each, 55 cents.

CHASERS' FILES :	Small.	Medium.	Large.
Each,	30c.	50c.	60c.

STUBS' CHASING HAMMERS.

	1 oz.	1½ oz.	2 oz.	2½ oz.	3 oz.	4 oz.	5 oz.	6 oz.
Price each,	60 cts.	65 cts.	70 cts.	75 cts.	80 cts.	$1 00	$1 15	$1 40

Swiss Chasing Hammers, each, ... 75 cts.
Stubs' Case " . . . No. 98, $1 00; No. 98a, $1 15
Swiss " " . . . . . Each, 65 cts.

DAPPING DIES.

	15	18	21	24	27	30	33	36 lignes.
Brass, . .	$2 50	$3 00	$3 75	$4 75	$6 00	$9 00	$10 25	$12 00 each.
Iron, . .	2 50	2 75	3 50	4 25	4 75	6 00	7 50	10 00 "

PUNCHES for Dapping Dies, . . . Set of 12, Boxwood, $1 50 per set.
" " " . . . " 12, Steel, 3 00 "
" and Cutters for Dapping Dies, " 24, " 5 00 "
" " " " " 35, " 7 50 "

BLANK DIES for Jewellers, ... 3 lb. and under, per lb., 45 cts.
" " " . . . . 4 lb. and over, " 40 "

JEWELLERS' DRAW BENCHES, complete, including tong, . . . $52 50

DRAW PLATES.

Stubs':	Small.	Medium.	Large.
Each, ...	$1 00	$1 50	$2 00

French Round and Square Hole, per hole, . . . 8 cts.
" " " " large, " . . . 15 "
" " " " extra large, " . . . 20 "
" half round " " . . . 15 "
" assorted " " . . . 10 "
American Round " " . . . 12 "
" Knife and Pinion " " . . . 30 "
Vienna Plates for filigree work, " . . . 9 "
Ruby " each, . . . $1 50

Plates of any size or shape made to order.

DRILLS.

Pump Drills, American, each, $2.
" " French, Nos. 1 2 3 4 5 6
Each, ... $1 60 $1 75 $2 25 $2 35 $2 50 $2 75
Handles for Pump-Drills, each, 10 cents.
Drills " " " 10 "

ARCHIMEDEAN DRILL STOCKS, with spool slide:

German, heavy,	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
Each, . .	$1 25	$1 25	$1 30	$1 35	$1 50	$1 75	$2 00

EMERY FILES.

	Small.	Medium.	Large.
Square, solid, each, ...	30c.	35c.	40c.
¾, " "	30c.		
Flat, with wooden handles, . . .	25c.	30c.	40c.

GAUGES.

Boxwood Ring Gauge-Sticks, A to Z, each, ... $0 40
" " " Nos. 1 to 33, each, ... 50
Brass " " Nos. 1 to 33, each, ... 1 00
Allen's American Standard Ring Gauge-Sticks, German silver, each, . 1 50
" " " Gauge-Rings, German silver, set, . . . 2 50
French (Nos. 1 to 33) Gauge Rings, German silver, set, ... 2 50
" (A to Z) Gauge-Rings, German silver, set, ... 2 00

CHAIN-MAKERS' GAUGES:	Small.	Large.
Each, ...	$2 50	$3 00

Sheet-Metal Dial Gauges, each, $2.

INGOTS.

Open Ingots:	Small.	Large.
Each, . .	75c.	$1 00

Open Ingots:	2 bars, 11½ in. long.	2 bars, 21 in. long.	3 bars, 13 in. long.
Each, . .	$1 25	$1 50	$1 75

Closed Ingots:	Plain.	Sliding, for diff. sizes.	Sliding, ex. large.
Price, each, .	$2 50	$3 and $4	$6 00

JOINT WIRE CUTTING TOOL, each, $15.

JOINT WIRE FILING TOOLS:	Small.	Large.
Each, ...	$1 25	$2 50

LAP-WHEELS.

	6 in.	7 in.	8 in.	9 in.	10 in.
Each, ...	$7 50	$9 00	$12 00	$14 00	$16 00

BRASS CHUCKS for Laps, each, $4 75.

HORSE-SHOE MAGNETS.

	2 in.	2½ in.	2¾ in.	3 in.	3¼ in.	3½ in.	4 in.	4½ in.	5 in.
Per doz., .	$1 10	$1 25	$1 60	$2 00	$2 50	$3 00	$4 00	$6 00	$7 00
Each, . .	10	15	20	25	30	30	50	62	75

	5½ in.	6 in.	6½ in.	7 in.	8 in.	9 in.	10 in.	11 in.	12 in.
Per doz., .	$8 00	$9 00	$12 00	$15 00	$20 00	$25 00	$30 00	$40 00	$45 00
Each, .	85	1 00	1 50	1 85	2 25	3 00	3 75	4 50	5 00

MALLETS.

Ord. hard wood, size of heads:	2x4 in.	2¼x4 in.	2½x4½ in.	3x4½ in.
Price, per dozen,	$1 00	$1 25	$1 50	$2 00
Each,	15	15	20	25

Boxwood, each, 25 cents; Lignum-vitæ, 35 cents; Buffalo, $1; Ivory, $3 25.

MANDRELS.

Ring Mandrels, Iron,	each,	$1 00
" " Steel, ⅛x¼ and ¼x½ in.,	"	75
" " " ½x1 in.,	"	1 50
" " " hardened, ½x1 in.,	"	2 00
" " " ¾x1½ in. and 1x1½ in.,	"	3 25

Oval Mandrels, steel:	Small.	Medium.	Large.
Each,	$1 50	$2 25	$4 00

Square Mandrels, steel, ½x1 in., each, $3 50

GOLD-TESTING NEEDLES, each, $4 00

PIERCING SAWS.

Square,	Nos. 000 to 5.	No. 6.	No. 7.	No. 8.
Per gross,	$1 00	$1 25	$1 50	$1 75
Per dozen,	10 cts.	15 cts.	15 cts.	20 cts.

Extra Quality, Nos. 000 to 3, gross, $1 25; dozen, 15 cts

Flat Piercing Saws, per gross, $1 00 to $3 00

SCALES AND WEIGHTS.

Scales in Oak Boxes, small, each, $1 25; large, each, $3 50

" Upright, in Boxes, each, $4 00 to $18 00

Brass Troy Cup Weights:	2 oz.	4 oz.	8 oz.	16 oz.	32 oz. and down.
Per set,	75 cts.	$1 00	$1 50	$2 50	$4 00

Dwts. and Grains, per set, 25 cts.

JEWELLERS' GERMAN HAND SHEARS.

SUPERIOR QUALITY.

	5 in.	5½ in.	6 in.	6½ in.	7 in.	7½ in.	8 in.	9 in.	10 in.	11 in.	12 in.
Each,	$1 00	$1 25	$1 25	$1 50	$1 50	$1 75	$1 75	$2 00	$2 25	$2 50	$2 75

GAUGE SHEARS for Jewellers, 7 inch, each, $2 50; 8½ inch, each, $3 25.

SCRAPERS.

American, three-cornered, hollow, each, 50 cents; solid, each, 25 cents.

Mezzotint, each, 35 cents.

Swiss, three-cornered, hollow:

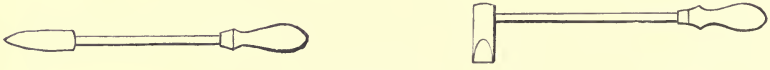
	3 and 3½ in.	4 in.	4½ in.	5 in.
Per dozen,	$3 00	$3 50	$4 25	$5 00
Each,	30	35	40	60

Swiss, three-cornered, solid, 3 and 3½ in., per dozen, $1 25; each, 15 cts.

Stubs' three-cornered, hollow, per dozen, $10 80; each, $1.

Stubs' Scraper and Burnisher, each, 60 cents.

SOLDERING IRONS.



Each, 60 cents to $2.

TONGS.

Blacksmiths' Tongs, per lb.,	35 cents.
" " small, each,	40 cents.
Crucible Tongs, per lb.,	35 cents.
Tongs for Draw Benches, each,	$4 25 to $9
Tongs for Hand-Drawing, each,	$2 to $4

VISES.

WOODEN HAND VISES or Ring Clamps, each, 75 cents.

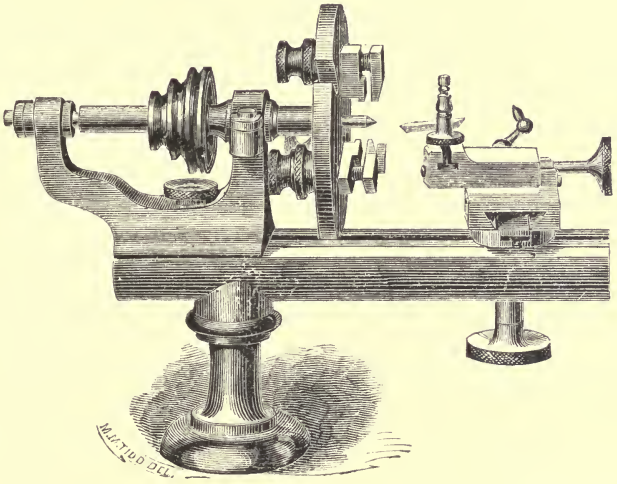
PIN VISES.

	Plain (or Solid).	Hollow.	Hollow (ex. large).
Each,	75 cts.	85 cts.	$1

	Hollow (with ebony handle).	Stubs'—hollow.
Each,	$1	$2 25

NUTS and SCREWS for Pin Vises, Stubs', each, 50 cents.

WATCHMAKERS' TOOLS.



Lathe No. 3.

THE NEW AMERICAN PATENT COMBINATION LATHE.

Patent extended from October 19, 1872.

The attention of the trade is called to some changes and improvements in the above "Patent Lathe." They are all made of steel, which is stiffer and in other ways more desirable than brass. All the Lathes will now be made with the full number of chucks, thus making them complete, and saving the necessity of the many orders for extra ones.

PRICE-LIST.

No. 1, steel; small, 6¾ in. bed, with 9 chucks, viz.: 5 split, 1 cement, 1 patent cement, 1 centre, 1 step,	$36 00
Nickel-plating, extra,	4 50
No. 2, steel: large, 8⅛ in. bed, with 10 chucks, viz.: 5 split, 1 cement, 1 patent cement, 1 centre, 2 step,	39 00
Nickel-plating, extra,	5 00
No. 3, steel; large, 8½ in. bed, with Universal Head 4 in. in diameter, patent slide-rest that works with cutters, 11 chucks, viz.: 5 split, 1 patent cement, 1 cement, 1 centre, and 3 step, the whole forming a complete lathe for watchmakers' use,	120 00
Nickel-plating, extra,	7 50

No. 4, steel; (new) 10 in. bed, with Universal Head 4½ in., patent slide-rest that works with cutters 11 chucks, viz.: 5 split, 1 patent cement, 1 cement, 1 centre, and 3 step, price, ... $150 00
Nickel-plating, extra, ... 9 00
No. 4, with hardened bearings, extra, price, ... 165 00
No. 5, steel; 10-in. bed, with Universal Head, 4½ in. diameter, patent slide-rest that works with cutters, extra pivoting head, extra tail stock with feed screw, 10 split chucks, 3 step chucks, 1 taper chuck with face-plates and tapers, 1 stud chuck with screw, and brassed for cementing (this last chuck also takes on caps), hardened bearings—the whole making a most perfect Lathe, price, .
Nickel-plating, extra, ...
On Nos. 3 and 4 is placed a jewelling attachment, or swing rest, used for setting jewels. Old lathes wanting this improvement added must be sent to us to be fitted. Price, No. 3, ... 30 00
Price, No. 4, ... 55 00
Nickel-plating, extra, ... 2 00
Wheels and Stands, ... 6 50

For further particulars send for descriptive Catalogue.

LATHES.

Steel Verge Lathes, 8 centres, 6 inches, each, ... $5 50
" " " 2 " 8 " " 5 50
" " " 2 " 10 " " 7 50
Pivot Lathes in paper boxes, each, ... 5 50
" " " morocco boxes, each, ... $6 00 to $15 00

Jewelling Lathes:	Plain.	With extra rest.	With back centre.
Each, . . .	$15 00	$18 00	$24 00

Screw Head Lathes:	3 pieces.	5 pieces.	5 pieces and 2 laps.
Each, ...	$2 25	$2 35	$4 00

Extra pieces for Screw Head Lathes, . . per doz., $2 80; each, 30 cts.
Centring Lathes, each, ... $1 75

Brass Drilling Lathes:	Small.	Medium.	Large.
Each, ...	60 cts.	$1 00	$1 35

Paris Drilling Lathes:	Nos. 0	3	6
Each, ...	$1 50	$2 00	$3 00

TOOLS FOR CENTRING STAFFS AND REPLACING PIVOTS, each, . . $10 00

TURNING ARBORS.

Nos. 1° to 12°	1 to 12	1 to 18	1 to 24	1 to 30	1 to 36
Per set, 75 cts.	$1 00	$1 25	$1 50	$2 00	$2 50

FUZEE ARBORS, each, ... 50 cts.
BARREL CONTRACTORS, each, ... $3 00
BOWS, WHALEBONE, ... 15 to 60 cts. each.

BRUSHES.

Wooden Handles, first quality:	3	4	5	6 rows.	
Per dozen, . .	$1 75	$2 00	$2 30	$2 60	
Each, . . .	15	20	25	30	
Wooden Handles, extra quality ·	2	3	4	5	6 rows.
Per dozen, ...	$2 10	$2 35	$2 60	$2 85	$3 25
Each, ...	20	25	25	30	30
Wooden Handles, goat hair:		3	4 rows.		
Per dozen, . . .		$2 40	$2 90		
Each, ...		25	30		
Bone Handles, first quality:	3	4	5	6 rows.	
Per dozen, . .	$2 50	$3 00	$3 50	$4 00	
Each, . . .	25	30	30	35	

BURNISHERS.

Pivot: Grobet's, $2 55 per dozen; 25 cents each.
Vautier's, $3 35 per dozen; 30 cents each.

CATGUT, small, for drill bows, per dozen pieces, 25 to 35 cents.

CALIPERS.

Brass, double, plain, per dozen, $2 30; 25 cents each.
" " " with stop, per dozen, $3; 30 cents each.

Pinion, plain, per dozen, $2 50; 25 cents each.
" with brass top, per dozen, $3; 35 cents each.

COLLETS.

Verge and Pinion, finished, ...	$3 25	per doz.	; 30 cts.	each.	
Not cut, "	3 50	"	35	"	
Plain, ...	1 60	"	15	"	
With 3 screws, small, ...	1 20	"	15	"	
" 3 " larger, ...	1 65	"	20	"	
" 4 "	3 80	"	35	"	

	6	8	10	12 lignes.
Per dozen, ...	$1 95	$3 00	$4 20	$5 75
Each, ...	20	30	40	50

COUNTERSINKS and BURNISHERS, 6 each to set, per set, $2 50.
" 6 to set, per set, $1 25.

PEG-WOOD CUTTERS, each 50 cents. KNIVES, each 15 cents.

DEPTHING TOOLS.

	3 in.	3½ in.	4 in.	5 in.	6 in.	7 in.	8 in.
Each,	$4 25	$10 50	$12 00	$14 00	$16 00	$18 00	$25 00

UPRIGHT TOOLS, each, ... $4 00

CENTRING TOOLS, each, ... 75

CENTRING LATHES, each, ... 1 75

DRILL STOCKS.

Side Drill Stocks:	Small.	Medium.	Large.
Per dozen,	$1 50	$1 75	$2 50
Each,	15 cts.	20 cts.	25 cts.

French Drill Stocks:	Small.	Larger.	Large, with handle to spool.
Each,	65 cts.	75 cts.	$1 00

PIVOT DRILLS, ... per dozen, 25 cts.; each, 3 cts.

EYE-PROTECTORS, or Wire Goggles, for turning, per doz., $1 50; each, 15 cts.

GAUGES.

Bottom's Hair Spring Gauges, each, ... $2 50
Dennison's Main " " plain, each, ... 3 50
" " " " with pivot attachment, each, . . . 4 50
Glass Gauges, Geneva, each, ... 2 50
" " " for heights, each, ... 3 50
" " Lunette, each, ... 25 cts. to 50 cts.
Pivot " . . . . . 75 cts.
Douzièmes (or ½ of line Gauges), ... 1 00

Dial or Button Gauges:	French.	American.
Each,	50 cts.	$1 00

Wheel Gauges, ... small, $2 00 each; large, $5 00 each.

HAMMERS.

STUBS' HAMMERS, CAST-STEEL.

	Watchmakers', Flat and Rd. Face.	Geneva Pattern. Small.	Geneva Pattern. Larger.	Clock-Makers'. Nos. 95	95 A	95 B	95 C
Per doz.,	$4 50	$4 50	$5 60	$5 00	$5 60	$6 75	$7 85
Each,	40	40	50	45	50	60	70

SWISS HAMMERS, CAST-STEEL.

	18 to 24	25 to 30	31 to 36	37 to 42	43 to 48 lines long.
Per dozen,	$2 00	$2 30	$3 50	$5 40	$6 00
Each,	25	30	35	50	60

UNIVERSAL HANDLE for holding Watchmakers' Turning Gravers, each, $1.

INDEX PLATES.

Index Plates for Cutting Engines, Swiss, each $10.
" " " " cut to order.

Price of plain brass or cast-iron Plates, without drilling:

Diam.,	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	11 in.	12 in.
Each,	$2 75	3 30	4 25	5 00	6 00	7 25	8 50	10 50	13 00	14 25

Price for drilling holes in plates:

1 to 50 holes, $2 75.
50 to 100 holes, $4.
100 to 300 holes, $5 50.
300 to 500 holes, $8.
500 to 2,000 holes, 1 cent per hole.
All above 2,000 holes, ¾ cent per hole

KEYS.

Watch-Keys:	Steel.	Steel, tempered.	Brass.	Brass, ex. qlty.
Per gross,	$1 00	$1 25	$2 25	$7 20
Per dozen,	15	20	25	75

English's Patent Folding Keys, per dozen, $1 ; each, 15 cents.
Star Keys, 6 pipes, per dozen, $1 50 ; each, 15 cents.

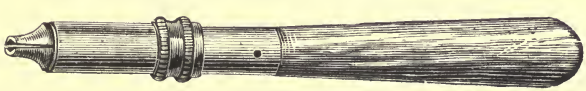
	Per gross.	Per dozen.	Each.
Music-Box Keys,	$3 75	40c.	10c.
" Key Pipes,	1 75	20c.	3c.
Watch-Key Pipes, tempered,	1 10	10c.	3c.

Bench-Keys, bone handles, set of 4, double, $1 per set.
" " " " " 6, double, $1 50 per set.

BIRCH'S PATENT UNIVERSAL WATCH-KEYS.

	Brass.	Ger. Sil., with Blk. Wood Hdls.	Gold-Plated.
Per dozen,	$3 50	$6 00	$15 00
Each,	50	75	2 00

MASON'S UNIVERSAL BENCH-KEY.



Per dozen, $7 50. Each, $1.

EXCELSIOR Watch-Keys, wood handles, per dozen, 75 cents ; each, 10 cents.
ALLEN'S Watch-Keys, brass handles, per dozen, $1 ; each, 10 cents.

MAIN-SPRING PLYERS.

Main-Spring Plyers:	3 Punches.	4 Punches.
Plain, each,	$2 25	$2 35
Bronzed, each,	2 75	3 00

Main-Spring Punches, Stubs', each, $1.

MAIN-SPRING WINDERS, per dozen, $7 50; each, 75 cents.

MOVEMENT HOLDERS, per dozen, $5 60; each, 50 cents.

PUNCHES.

Riveting Punches, in boxwood boxes:

12	13	18	19	24	25 Punches.
75c.	$1 00	$1 00	$1 25	$1 25	$1 50 per Box.

In boxes containing 13, 19, and 25 Punches, one piece is a round stake.

Punches for closing holes, each, 40 cents.

ROUNDING-UP TOOLS, each, $45.

CUTTING ENGINES, for cutting wheels and pinions.

STAKES.

	Cast-Steel, Round or square end.	Common.	Verge Riveting.	Steel Riveting.
Per doz.,	$4 00	$2 60	$1 25	$3 50
Each,	40	25	15	35

	Brass Riveting.	Steel Riveting, set in Brass.
Per dozen,	$1 40	$3 00
Each,	25	30

CASE STAKES.

	Swiss.			Stubs'.	
	Steel, small.	Steel, larger.	Ebony.	Steel, small.	Steel, larger.
Each,	70c.	$1	30c.	$1	$1 30

Side Case Stakes, Swiss, each, $1 15.

STAKING TOOL.

With 20 punches, $6 50.
" 20 " and Roller Remover, $7 75.

SWISS WATCH SCREW PLATES, very small (no taps), 4 cents per hole.

WATCH HAND TONGS.

	2 holes.	2 holes, steel.	9 holes.
Each,	50c.	60	85

SILVERSMITHS' TOOLS.

ANVILS, ... 60 cents per lb.

BLOODSTONE BURNISHERS.

Nos.,	1	2	3	4	5	6	7	8	9	10	12
Each,	$1	$1 50	$2	$2 75	$3 25	$4	$5	$5 50	$6	$8	$9

STEEL BURNISHERS.

American, for silversmiths, per dozen, $6 ; each, 60 cents.

Steel Burnishers of any required pattern made to order, at prices varying according to size and shape.

BRASS SCRATCH BRUSHES, IN PACKS.

MASTERWORK.

No. of Brushes in a pack,	1	2	3	4	5	6	8
Price of each Brush,	$2 75	$1 40	95c.	75c.	60c.	50c.	40c.

No. 12.

No. of Brushes in a pack,	1	2	3	4	5	6	8
Price of each Brush,	$1 50	90c.	75c.	50c.	40c.	30c.	25c.

STEEL SCRATCH BRUSHES.

No. of Brushes in a pack,	1	2	3	4	5	6	8
Price of each Brush,	$2 25	$1 15	85c.	65c.	50c.	40c.	35c.

Each pack contains the same weight of wire.

ENGRAVERS' TOOLS.

GRAVERS.

Stubs' Gravers, assorted shapes, . . . $1 40 per dozen ; 15 cts. each.
" " Lozenge and Square, Nos. 1 to 5, 1 40 " 15 "
" " " " No. 6, . 1 50 " 20 "
" Tint Tools, ... 1 75 " 20 "
Vautier's Gravers, assorted shapes, . . . 1 40 " 15 "

Vautier's Gravers:	Lozenge.	Square, No. 1 to 8.	Square, No. 9 to 12.
Per dozen, . .	$1 70	$1 60	$1 75
Each, . . .	15	15	20

	Square, No. 12 to 18.	No. 20.
Per dozen, ...	$1 60	$1 80
Each, ...	15	20

Vautier's Line Gravers, small, ... $4 50 per dozen ; 45 cts. each.
" " larger, ... 6 00 " 60 "
" Tint Tools, ... 1 50 " 15 "
Seller's Gravers, Lozenge and Square, . . 1 50 " 15 "
Lithographers' Points, ... 3 00 " 30 "
Renard's Tint Tools, ... 3 00 " 30 "
" " " (set of 8 tools) per set, $2 50.
" " " (set of 12 tools) per set, $4 50 and $5.
" Gravers, assorted shapes, per dozen, $1 50 ; each, 15 cents.

ROULETTES.

	Mezzotint.	Single Wheel.
Each, . . .	$1 25	$1 75

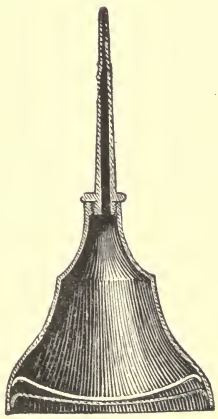
MARKERS.

Engravers' Markers, Stubs' and Vautier's, per dozen, $3 25 ; each, 35 cents.
" " Nicoud's " 2 40 " 25 "

Eye-Glass Stands:	Swiss.	French (heavy).
Each, ...	$1 50	$4 00

SUPPLIES.

MACHINISTS' SUPPLIES.



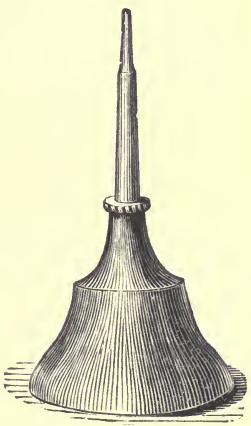
Section showing the Patent Elliptic Spring.

MALLEABLE IRON OILERS

WITH

ELLIPTIC STEEL SPRING.

Price each, . . 50 cts.
Per dozen, . . $5 50

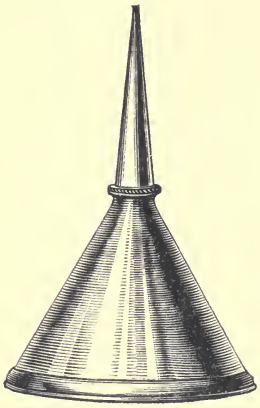


CHACE'S PATENT OILERS.

The application of "Chace's Patent Spun Screw" to these Oilers renders them greatly superior to those having the ordinary cut screw. The opening being larger, they can more easily be filled, and the thread is less liable to strip or become bruised, in either case making an oiler useless.

CHACE'S PATENT ZINC OILERS (with brass bottoms).

Nos., . . .	00	0	1	2	3	4	5	6
Per doz., . .	$1 00	$1 10	$1 35	$1 75	$2 00	$2 35	$3 25	$3 85
Each, . . .	10	15	15	20	20	25	35	40

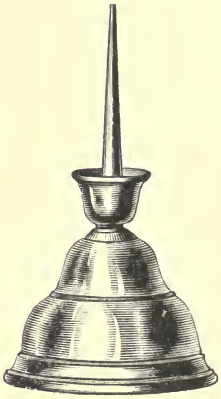


CHACE'S PATENT BRASS OILERS.

Nos.,	00	0	1	2	3	4	5	6
Per doz.,	$1 50	1 65	2 25	2 75	3 25	3 75	5 00	6 25
Each,	15	20	25	30	30	35	45	60

	Bent.	Straight.
Long Spouts, extra, per doz.,	50 cts.	35 cts.
Each, ...	5 "	5 "

PARAGON OILERS.



ZINC.

Nos.,	0	1	2	3	4	5	6
Per doz.,	$1 65	$2 00	$2 35	$2 75	$3 00	$3 35	$4 00
Each,	20	25	25	30	30	35	40

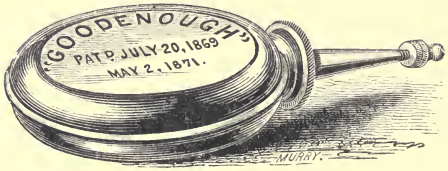
COPPER.

Nos.,	0	1	2	3	4	5	6
Per doz.,	$2 75	$3 35	$4 00	$4 65	$5 35	$6 65	$8 00
Each,	30	35	40	45	50	60	75

ZINC SEWING-MACHINE OILERS.

No. 0, per dozen, $1 ; each, 10 cts.

THE GOODENOUGH POCKET OILER.



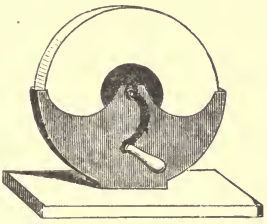
Tin, ... per doz., $2 00 ; each 20 cts.
Nickel-plated, ... " 3 00 " 30 cts.

OIL.

Kelley's Sewing-Machine Oil, . per dozen bottles, $1 80 ; per bottle, 25 cts.
Miller's " " " " " 1 50 ; " 25 cts.

GRINDSTONES.

FAMILY GRINDSTONES.

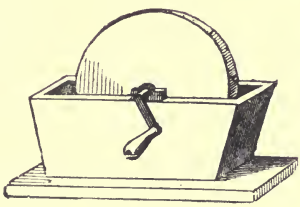


Family.

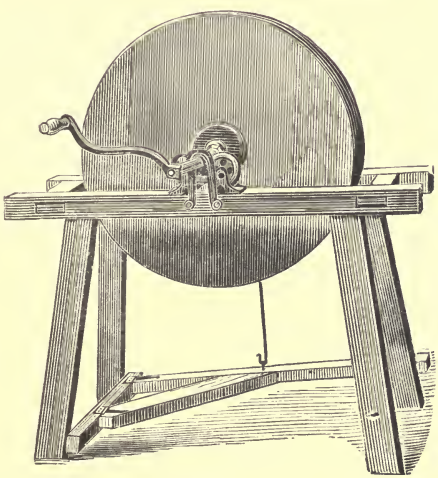
	Per dozen.	Each.
6-inch,	$9 00	$0 80
7 "	10 50	1 00
8 "	12 00	1 25
9 "	15 00	1 35
10 "	16 75	1 50
11 "	20 00	2 00
12 "	24 00	2 25
13 "	26 00	2 50
14 "	30 00	3 00
16-inch,	36 00	3 50
18 "	43 00	4 00

SHIP GRINDSTONES.

	Per dozen.	Each.
12-inch,	$33 00	$3 00
13 "	35 00	3 25
14 "	38 00	3 75
15 "	42 00	4 00
16 "	45 00	4 50
17 "	49 00	4 75
18 "	53 00	5 00



Ship.



Framed.

FRAMED GRINDSTONES.

50 lbs., each,	$6 00
60 "	6 50
70 "	7 00
80 "	7 50
90 "	7 75
100 "	8 00
110 "	8 25
120 "	8 50
130 "	8 75
140 "	9 00
Wooden Troughs, extra,	1 50

PATENT STRETCHED AND RIVETED SHORT-LAP BELTING.

These Belts are made from pure oak-tanned butts, and of the heart or solid part only. Warranted to run straight and even on the pulleys.

PRICE-LIST PER RUNNING FOOT.

Width,	1	1½	2	2½	3	3½	4	4½	5	5½	6	7	8 in.
Per ft.,	6c.	12c.	18c.	24c.	30c.	36c.	42c.	48c.	54c.	60c.	66c.	78c.	90c.

Width,	9	10	11	12	13	14	15	16	17	18	19	20 in.
Per ft.,	$1 02	1 14	1 26	1 38	1 50	1 62	1 78	1 94	2 10	2 26	2 42	2 58

Width,	21	22	24	26	28	30	32	34	36	40	44	48 in.
Per ft.,	$2 74	2 90	3 22	3 56	3 90	4 22	4 54	4 86	5 18	5 82	6 46	7 10

SOLID ROUND BELTING.

Diameter,	1/8 in.	3/16 in.	1/4 in.	5/16 in.	3/8 in.
Per foot,	5c.	7c.	10c.	12c.	14c.

TWISTED ROUND BELTING.

Diameter,	1/8 in.	3/16 in.	1/4 in.	5/16 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	7/8 in.	1 in.
Per foot,	5c.	9c.	12c.	15c.	17c.	19c.	24c.	30c.	36c.	42c.

CATGUT FOR LATHE BANDS AND CLOCK CORDS.

(Nos. by Brown & Sharpe's Iron Wire Gauge.)

Nos.,	0	1	2	3	4	5	6	7	8
Each,	$6 00	$5 00	$3 75	$3 25	$2 75	$2 00	$1 50	$1 25	$1 00

Nos.,	9	10	11	12	13	14	15	16	17	18	19	20
Each,	75c.	60c.	55c.	45c.	35c.	30c.	30c.	25c.	20c.	20c.	15c.	15c.
Per doz.,	$8 00	6 25	5 75	5 00	4 00	3 25	3 00	2 75	2 25	2 00	1 75	1 75

LACE LEATHER.

Best quality, per side, $3.

Cut in strips (in 100-ft. packages):

Size,	1/4 in.	3/8 in.	1/2 in.	5/8 in.
Price per 100 ft.,	$1 00	$1 25	$2 00	$2 75

HOOKS AND EYES FOR ROUND BELTING.

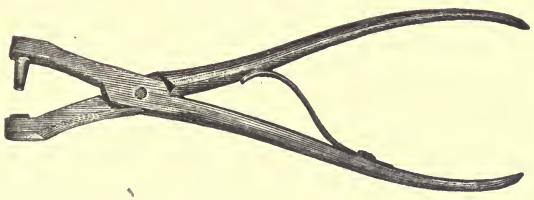
Per dozen pair, $2 40 to $8; per pair, 25 cents to 75 cents.

FLAT BELT HOOKS.

Nos.,	4	5	6	7	8	9	10	11	12	13	14	15
Price per 1,000,	$10	$8 50	$7	$5	$4	$3 50	$3	$2 75	$2 50	$2 25	$2	$1 75

BLAKE'S PATENT BELT STUDS.

Nos.,	0	1	2	3	4	5
Price, per 100,	$2 50	$2 00	$1 50	$1 00	90c.	75c.



ORDINARY SPRING BELT PUNCHES, each, 75 cents.

BAUER'S PATENT BELT PUNCH, each, $2.

BELT AWLS, each, 15 cents to 50 cents.

ALPHABETS AND FIGURES.

ALPHABETS, best cast-steel :

Size,	1/32 in.	1/24 in.	1/21 to 1/8 in.	5/32 in.	3/16 in.	7/32 in.	1/4 in.	5/16 in.	3/8 in.
Per set,	$6 00	$5 25	$4 50	$6 00	$6 75	$7 50	$9 00	$9 75	$11 25

FIGURES, best cast-steel :

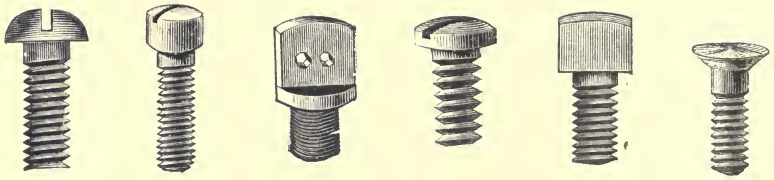
Size,	1/32 in.	1/24 in.	1/20 to 1/8 in.	5/32 in.	3/16 in.	7/32 in.	1/4 in.	5/16 in.	3/8 in.
Per set,	$2 00	$1 75	$1 50	$2 00	$2 25	$2 50	$3 00	$3 25	$3 75

Name Punches or Letters and Figures of any size made to order.

HANDLES.

	Dozen.	Each.
Universal File Handles, Swiss,	$1 65	$0 15
Assorted " American or Swiss,	40	4
Ebony "	1 00	10
" Pillar File Handles (to cement),	50	5
" Hammer "	1 30	12
" Graver "	1 00	10
Assorted " " American and Swiss,	40	4
" Hammer " " "	50 & 75c.	5 & 10c.
" Chasing Hammer Handles,	$0 75	$0 10

MACHINE SCREWS.



PRICE PER GROSS.

No. Threads to Inch.	32	30	24	24	20	18	18	18	16
Wire Gauge Size of Screws.	6	8	10	12	14	16	18	20	24
Length under Head to Point. 3/8 in...	$0 80	$0 90	$1 00						
1/2 " ...	80	90	1 00	$1 05	$1 35	$1 62			
5/8 " ...		90	1 00	1 05	1 35	1 62	$1 88	$2 35	
3/4 " ...		90	1 00	1 18	1 45	1 70	2 05	2 50	
7/8 " ...			1 05	1 25	1 50	1 80	2 25	2 70	
1 " ...			1 18	1 35	1 62	2 00	2 45	2 90	$3 60
1 1/4 " ...				1 45	1 70	2 15	2 60	3 05	3 95
1 1/2 " ...					1 80	2 35	2 75	3 25	4 30

Machine Screws of any required size or thread made to order.

EMERY.

	Per lb.	Per 10 lbs.	Per 100 lbs.
Emery, first quality, . .	15 cts.	$1 25	$10 00

	Per ream.	Quire.	Sheet.
EMERY CLOTH of the best brands, . .	$20 00	$1 25	8 cts.

EMERY PAPER, American, best quality:	Nos. 00 to 1 1/2	2	2 1/2	3
Per ream, ...	$7 00	$8 00	$10 00	$12 00
" quire, ...	50	50	60	65
" sheet, ...	3	3	3	3

	Per 100 sheets.	Per doz.	Per sheet.
EMERY PAPER, French, 1st q'ty, 0000 to 6,	$2 50	30 cts.	3 cts.

	Per ream.	Quire.	Sheet.
SAND-PAPER, Nos. 00 to 3, ...	$5 00	30 cts.	2 cts.

JEWELLERS' SUPPLIES.

ANTI-OXYDIZER, 35 cents per bottle.

ACID BOTTLES:

	Small.	Large.
Each, ...	35c.	40c.

Acid Bottles in wooden boxes, with screw tops:

	Small.	Large.
Each, ...	50c.	$1

BORAX in Crystals, for soldering, per lb., 65 cents.

" for melting, per lb., 30 cents.

" slates, each, 25 to 75 cents.

BEESWAX, per lb., 50 cents.

BOXWOOD SAWDUST, per bbl., $3; per quart, 10 cents.

CHAMOIS SKINS, each 40 cents to $1.

" " Rouged, each, $1 75.

LIQUID CEMENT, Harris', per dozen, $2; per bottle, 25 cents.

CHEMICALLY PURE COPPER for alloying, per lb., 60 cents; in packages of 10 lbs. and over, 50 cents per lb.

CRUCIBLES.

SAND CRUCIBLES.

Size, . . .	3s.	Small 5s.	Large 5s.	6s.	8s.
Per dozen nests, .	50c.	75c.	$1 50	$2 40	$4 00
Per nest, . .	5c.	8c.	15	25	40

BLACK-LEAD CRUCIBLES.

Nos., ...	1	2 to 4	5 and larger.
Each, ...	20c.	25c.	6c. per number.

DENNISON'S MERCHANDISE AND SHIPPING TAGS. Price-list sent on application.

REFLECTING GLOBES. No. 1, 75 cents each; No. 2, $1 each.

ALCOHOL LAMPS.

	Tin, small.	Tin, large.	Brass, small.	Glass.
Each, ...	30c.	35c.	50c.	50c.

SELF-ACTING OR SELF-BLOWING LAMPS.

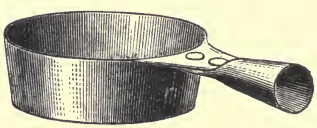
French:	Small.	Large.
Each, ...	$2 00	$3 00

American, improved style, each, $4.

VIENNA LIME, in cans:	First quality.	Second quality.
Per lb., .	40c.	25c.

" " in bottles, per bottle, 25 cents.

PICKLE PANS.



Diameter, .	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.	6½ in.	7 in.
Price, each, .	75c.	$1 00	$1 25	$1 50	$1 75	$2 00	$2 25	$3 00	$3 50

Pans of any required size and shape made to order.

ROUGE.

	German.	Soft, in balls.	Hard, 1st qlty.	Hard, 2d qlty.	Crocus.
Per lb., .	$1 50	$1 25	$1 25	$1 00	75c.

Ruby Powder, per dozen, $3; each, 30 cents.

Steel Rouge, Gloss & Sharpe, per dozen, $2 40; each, 30 cents.

SALTPETRE, refined, per lb., 23 cents.

GOLD SHELLS, per dozen, $2 50; each, 25 cents.

Silver " " 1 20 " 15 "

SOLDER.

Jewellers' Soft Solder, per lb., 90 cents ; per bundle, 10 cents.
Tinners' " " " 25 "
Silver Solder, per oz., $1 40.

JOBBING STONES.

Best, $1 50 per gross ; second quality, 50 cents per gross.

SCOTCH STONE SLIPS.

	3/16 and 1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	7/8 to 1 in.
Per dozen, . . .	75c.	75c.	$1 00	$1 25	$1 50	$2 00
Each, ...	10c.	10c.	15	15	20	25

BLUE-STONES.

25 to 50 cts. per pack. Pieces 7x2x1 in., each, 50 cents.

TOUCHSTONES

For testing the karat of gold.

	Small.	Medium.	Large.
Each, ...	50c.	75c.	$1 to $3

ROTTEN-STONE, per lb., 10 cents.

TRIPOLI.

Best German, lump or soft, per lb., 40 cents.
" " in bottles, soft, per bottle, 25 cents.

IRON WIRE ON SPOOLS, per spool, 30 cents.
" " in coil for jewellers, Nos. 16 to 36, 20 to 55 cents per lb.

WATCHMAKERS' SUPPLIES.

MATERIAL BOXES.

Wooden Material Boxes, divided into compartments, each, 75 cts. to $5 00

Metal Material Boxes:	1¼ in.	1½ in.	1¾ in.	2 in. diam.
Per doz.,	$1 50	$1 60	$1 75	$2 00
Each,	15	15	20	20

CHALK BOTTLES, each, 35 cts.

OIL BOXES:	Glass.	Porcelain.	Crystal.	Agate.
Each,	25 cts.	25 cts.	30 cts.	35 cts.

GLASS SPIRIT BOXES:	Small.	Medium.	Large.
Each,	40c.	50c.	60c.

PREPARED CHALK for Watchmakers, per dozen, 50 cents; each, 5 cents.

GLASS COVERS:	3 in.	3½ in.	4 in.	5 in.
Each,	25c.	35c.	40c.	50c.

DIAMANTINE, O. Mathey's, best, $6 50 per dozen; 60 cents each.

OIL.

Kelley's Watch and Clock Oil, per dozen bottles, $2 40; each, 25 cents.
Geery's " " " " 2 40 " 25 "

PEG-WOOD, per dozen bundles, $1; per bundle, 10 cents.
PETH, " " 75c. " 10 "
WAX for Watch Lathes, Bottom's, per dozen, $1; per piece, 10 cents.

STEEL CHAINS AND SILK GUARDS.

	Per dozen.	Each.
Steel Watch-Chains,	$0 50 to $1 00	$0 10 to $0 15
Wire "	4 00 " 4 65	40 " 45
Silk Eye-Glass Guards,	35 " 75	5 " 10
Silk Guards,	1 00 " 3 00	10 " 30
Silk Ribbons, watered,	4 00	40
Silk Ribbons,	1 65 " 4 87	20 " 50
Plain Ribbons,	1 40	15

ENGRAVERS' SUPPLIES.

ENGRAVERS' BLOCKS, each,	. . . . .	$1 75 to $6 50
"	Ring and Solid Pads, each, ...	75 " 2 00
"	Balls, each, ...	2 00 " 3 50
"	Daubers, each, ...	2 00

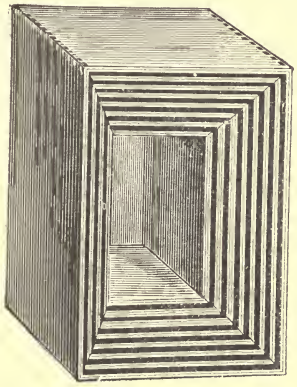
CEMENT, Engravers', per lb., 30 cents; per 10 lbs., $2 50.

OIL-STONES.

Arkansas, Washita, and Turkey Oil-Stones in great variety.

Square, knife-edge, three-cornered, and pointed Arkansas Oil-Stone slips.

RAZOR HONES, . . . 25 cents to $2 50 each.



WOOD NEST PACKING-BOXES.

These boxes are made of dry pine wood, and nested, thus giving an assortment of sizes in a small space. They are very useful for *express* purposes. All the boxes are dove-tailed at corners.

WOOD MAILING-BOXES.

The attention of Jewellers, Druggists, Confectioners, and others is invited to these Boxes. They are made of well-seasoned basswood, and are strong, light, and require less postage than paper. They are used for mailing jewelry, patent medicines, drugs, perfumery, snuff, candies, etc.

Any size of these boxes to order.

Descriptive Catalogues and Price-lists sent on application.

MATERIALS.

AMERICAN CLOCK MATERIAL.

	Dozen.	Each.
Alarms, complete,	..	$0 50
Bells,	$0 75	..
Cord, Linen,	..	10
" Catgut,	..	10c. to 30
Dials, O. G.,	..	30
" Gothic,	..	25
" Seth Thomas', weight,	..	30
" " " spring,	..	20
Keys, Brass,	75	10
" Iron,	50	5
Hands, hour and minute, per dozen pair,	50	pair, 10
" seconds,	50	10
Hair Springs,	..	15
Pendulum Balls,	75	10
" Rods,	50	5
" Sash,	..	15
Sash and Dials, 4-inch,	..	45
" " 5-inch,	..	55
" " 6-inch,	..	65
Tablets, O. G.,	..	25
" Gothic,	..	20
Springs, 1-day, $\frac{5}{16}$, $\frac{3}{8}$, and $\frac{7}{16}$ in.,	..	20
" 8-day, $\frac{3}{4}$, $\frac{13}{16}$ in.,	..	40
" 8-day, extra, $\frac{7}{8}$, 1 in.,	..	45
" 1-day, lever, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$ in.,	..	30
" 8-day, lever,	..	50
Verges,	75	10
Washers, per gross,	50	..

FRENCH CLOCK MATERIAL.

ALARM CLOCK.

Bells, ... 30 cents each.
Dials, ... 35 "
Hands, index, ... 75 cents per dozen; 10 "
" . . . . per dozen pair, $2 50; pair, 25 cents.

FRENCH CLOCK.

Ancre and Staff (together), ... 75 cents each.
Bells, ... 20 cents to 40 "
Dials, ... 35 " 60 "
Dial Numbers, ... per set, $1 50; 20 "
Hammers for Bells, ... $2 00 doz.; 25 "
Holders for Bells, ... 3 00 " 30 "
Hands, ... dozen pair, $2 00; pair, 25 cents.
Key-Holes (steel), ... " 10 "
Pallets, ... " 75 "
Pendulums (small), ... 30 cents each.
" (large), ... 50 "
Regulator Tops, ... 30 "
" Ratchets, ... 15 "
Suspensions, . . 75 cents and $1 per dozen; 10 and 15 "
Springs, ... 50 "
Screws, long movement, . . 25 cents per dozen; 5 "
" plate, ... 25 " " 5 "
Washers, ... 15 " " 5 "

WATCH MATERIAL.

Barrel Arbors, American,	65 to 75 cents each.
" " " imitation,	25 "
" " Lepine,	10 "
" " " finished,	15 "
" " English,	10 "

Barrels:	Lepine and Ancre.	Lever.	Amer.	Imit. Amer.
Each,	25c.	20c.	$1 to $1 50	25c.

Balances:	Composition and steel.	Expansion.
Each,	15c.	35c.
Bezils, Silver, each,		40c.

Bushing:	Watch.	Clock.
Per paper,	25c.	75c. per pack; per piece, 10c.

Fuzee Chains, Verge, per dozen, $1 75; each, 25 cents.							
" " Lever, Nos.	5	6	7	8	9	10	
Per dozen,	$2 75	3 60	$4 00	$4 50	$5 10	$5 75	
Each,	40	40	45	45	50	50	

CLICKS.

	Per dozen.	Each.
Short, finished,	$0 40	$0 05
" rough,	25	5
Long, "	25	5
" finished,	50	10
Three-quarter Plate,	50	10
Circular, American, imitation,	50	10

Cylinders, per dozen, $1 60; each, 20 cents.

WATCH-GLASSES.

	Per gross.	Per dozen.
Lunettes,	$2 00	$0 20
Geneva,	3 00	35

DIALS.

Dials, Lepine, with seconds, each,	$0 35
" English, " "	1 25
Dial-Wheel Washers, per box,	20

WATCH-HANDS.

Composition:	Moon and Spade.	F. de Lys.
Per dozen pairs,	20c.	50c.
Steel:	Moon and Spade.	F. de Lys and Fancy.
Per dozen pairs,	25c. to 50c.	50c.

Steel Seconds, per dozen, 15 cents to 30 cents.

American Steel Hands:	Spade.	Moon.	Assorted.	F. de Lys.
Per dozen pairs,	50c.	75c.	75c.	$1

American Steel Hands, Seconds:	Best.	Second quality.
Per dozen,	40c.	35c.

JEWELS.

Swiss Hole J'ls.		Cap Jewels.		Cap Jewels, ex. qlty.		Amer. Hole J'ls.	
Per doz.	Each.	Per gross.	Per doz.	Per gross.	Per doz.	Per doz.	Each.
$1 00	15c.	75c.	10c.	$1 00	15c.	$1 00	15c.

English Hole Jewels,

Set in steel.	Cock and Foot.	Plate.	Jewel Slips.
Per dozen, $2 10	$1 25	$2 40	$0 50
Each, 20	15	25	5

Ruby Pins, round and oval, per dozen, 30 cents; each, 5 cents.

PINIONS.

	6 leaf.	7, 8, and 10 leaf.	Cannon.	Centre.
Per dozen,	45c.	70c.	45c.	75c.
Each,	10c.	10c.	10c.	10c.

RATCHETS.

	Per dozen.	Each.
Lepine and American,	35c.	5c.
Fuzee,	20c.	5c.

REGULATORS, each, 15 cents.

REGULATOR COVERS, per dozen, 40 cents; each, 5 cents.

SCREWS.

	Lepine.	Lepine finished.	English.	English, finished.	Dial.
Per gross,	25c.	75c.	50c.	$1 25	$1

	Movement.	Bow.	Bridge.	Case-Spring.
Per gross,	$1 75	50c.	$1 00	25c. to 35c.

MAIN-SPRINGS.

First quality, per gross, $9; dozen, $1; each, 12 cents.

Extra quality, per gross, $12; dozen, $1 50; each, 15 cents.

Gravier's first quality, per gross, $15; dozen, $2; each, 25 cents.

CASE-SPRINGS.

	Per doz.	Each.
Lepine,	$0 75	$0 10
American,	1 50	15
Patent,	1 25	15

HAIR-SPRINGS.

	Bottom's.	Lepine and American.	Lever.	Verge.
Per dozen,	$1	25c.	35c.	10c.

MUSIC-BOX SPRINGS, ... each, 20 cts. to $1

HAIR-SPRING STUDS, ... per gross, 35 cts.; per dozen, 5 cts.

" COLLETS, ... " 50 " " 10 cts.

EYE-GLASS SPRINGS, per gross, $2 50 to $4 50; per doz., 25 to 50 cts.; ea., 5 cts.

RUBBER BLADES for Eye-Glasses, . . . per dozen, 10 cts.; each, 3 cts.

STAFFS, Ancre and Lepine, per dozen, 15 cents; each, 5 cents.

SQUARES, Lepine, per dozen, 30 cents; each, 5 cents.

CUPS for Squares, per dozen, 25 cents; each, 5 cents.

VERGES, per dozen, 75 cents; each, 10 cents.

WHEELS.

	Cylinder and Ancre.	Centre.	3d and 4th.	Minute.	Hour.
Per dozen,	$2 00	$1 00	$1 00	$1 50	$1 00
Each,	25	15	15	20	15

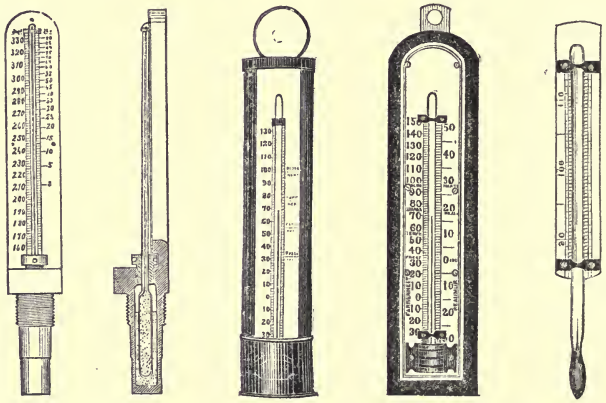
WIRE.

CLICK WIRE, per piece, 15 cents.

STEEL PINION WIRE, less than ¼ inch, 25 to 50 cents per foot.

" " "	¼ in.	5/16 in.	⅜ in.
Per foot, . .	75c.	$1 25	$2 50

BAROMETERS AND THERMOMETERS.



Steam. Japanned. Boxwood and Rosewood. Fever.

BAROMETERS.

Barometers, plain, in walnut case,	$10 00
" with clock, in walnut case,	15 00
" Aneroid, 3 to 8 in. diameter,	$6 00 to 25 00

THERMOMETERS.

Thermometers, Mercurial, Japanned cases:

	7 in.	8 in.	10 in.	12 in.
Per dozen,	$6 00	$7 00	$10 00	$12 00
Each,	60	75	1 00	1 50

Thermometers, Mercurial, Rosewood cases:

	8 in.	10 in.	12 in.
Each,	$2 25	$2 75	$3 50

Thermometers, Mercurial, Boxwood cases:

	8 in.	10 in.
Each,	$1 75	$2 25

Thermometers for confectioners, etc.:

Copper cases, Mercurial, 12 in., each,	$2 50

THERMOMETRIC STEAM-GAUGES, MERCURIAL.

Price, each, $8.

These Gauges have been tested by most experienced manufacturers, and are used by them on account of their superiority. They are warranted for one month.

FEVER THERMOMETERS.

Graduated on the stem (in hard rubber cases):

	4 in.	5 in.	6 in.
Per dozen,	$20 00	$21 00	$22 00
Each,	2 50	2 75	3 00

	Per dozen.	Each.
Graduated on ivory, pistol-shape,	$24 00	$3 00
" " " straight, or bent sideways, 4 in.,	15 00	1 75
" " " " " " 6 in.,	22 00	2 50

Dental Thermometers, ... Each, $5 00

Thermometers for Bark,	Each, $1 00
" " Milk,	" 1 00
" " Sea-water,	" 1 00
" " Spirits,	" 1 00
" " Wine,	" 1 00
" " Alkali,	" 1 00
" " Ammonia,	" 1 00
" " Bleach,	" 1 00
" " Vinegar,	" 1 00
" " Acid,	" 1 00
" " Lye,	" 1 00
" " Salt Pickle,	" 1 00
" " Syrup,	" 1 00
" " Beer,	" 1 00
" " Alcohol,	75c., $1 00, and 2 75

Barometers and Thermometers repaired.

METALS.

STUBS' BRIGHT STEEL WIRE OR DRILL-RODS.

(In one or three-foot lengths.)

Nos.,	15 and larger	16 to 30	31 to 38	39 to 46	47 to 50	51 to 54
Per lb.,	$1 25	$1 35	$1 50	$1 75	$2 00	$2 50
Nos.,	55 to 57	58 to 60	61 and 62	63 to 65	66 to 68	69 and 70
Per lb.,	$3 00	$3 50	$4 00	$4 50	$5 00	$5 50

MALTBY, HOPSON & BROOKS' STEEL DRILL-RODS.

(Same sizes as Stubs'.)

Nos.,	15 and larger.	16 to 30	31 to 38	39 to 46	47 to 50	51 to 54
Per lb.,	87c.	95c.	$1 05	$1 22	$1 40	$1 68
Nos.,	55 to 57	58 to 60	61 and 62	63 to 65	66 to 68	69 and 70
Per lb.,	$2 10	$2 45	$2 80	$3 15	$3 50	$3 85

BRIGHT ENGLISH STEEL RODS.

(In three-foot lengths.)

Nos. A to Z, and $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ in., per lb., 60 cents.

BRIGHT STEEL WIRE.

(In coil for springs; Nos. by Stubs' Iron Wire Gauge.)

Nos.,	13 and larger.	14	15	16	17	18	19	20
Per lb.,	35c.	40c.	45c.	50c.	55c.	60c.	65c.	70c.
Nos.,	21	22	23	24	25	26	27	28
Per lb,	80c.	$1 05	$1 15	$1 20	$1 35	$1 50	$2 50	$3 00
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Per lb.,	$3 60	$4 20	$5 10	$6 00	$6 75	$8 40	$9 60	$12 00

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Iron Wire Gauge:	Nos. 17 to 27.
Price per lb., ...	$1 25 to $3 60

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BRASS, COPPER, and GERMAN-SILVER WIRE in coil.

" " " " Rod.

BRASS WIRE on spools for springs, etc.

HAMMERED STEEL.

(The Nos. are by the Iron Wire Gauge.)

Flat, . .	$\frac{7}{16}$ x No. 10.	$\frac{3}{8}$ x No. 10.	No. 6 x No. 10.	No. 0 x No. 11.				
Per lb., .	70c.	75c.	90c.	80c.				
Flat, .	No. 4 x No. 11.	No. 5 x No. 11.	No. 6 x No. 11.	No. 8 x No. 12.				
Per lb., .	85c.	95c.	$1 00	$1 10				
Flat,	No. 9 x No. 12.	No. 7 x No. 13.	No. 10 x No. 13.	No. 11 x No. 18.				
Per lb.,	$1 35	$1 05	$1 80	$2 75				
Square, Nos. . .	1	2	3	4	5	6	7	8
Per lb., . . .	70c.	75c.	80c.	85c.	90c.	95c.	$1 00	$1 05
Square, Nos. . .	9	10	11	12	13	14	15	16
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Each,	$1 90	$2 25	$2 70

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